Old approaches won't snag the best and brightest. Try these 8 fresh tactics to target new IT talent in '08. PAGE 34

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Are You Obsolete?

How to stay relevant in the world of Web 2.0, the Wii and other wonders. PAGE 28

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JANUARY 28, 2008
VOL. 42, NO. 5 $5/COPY

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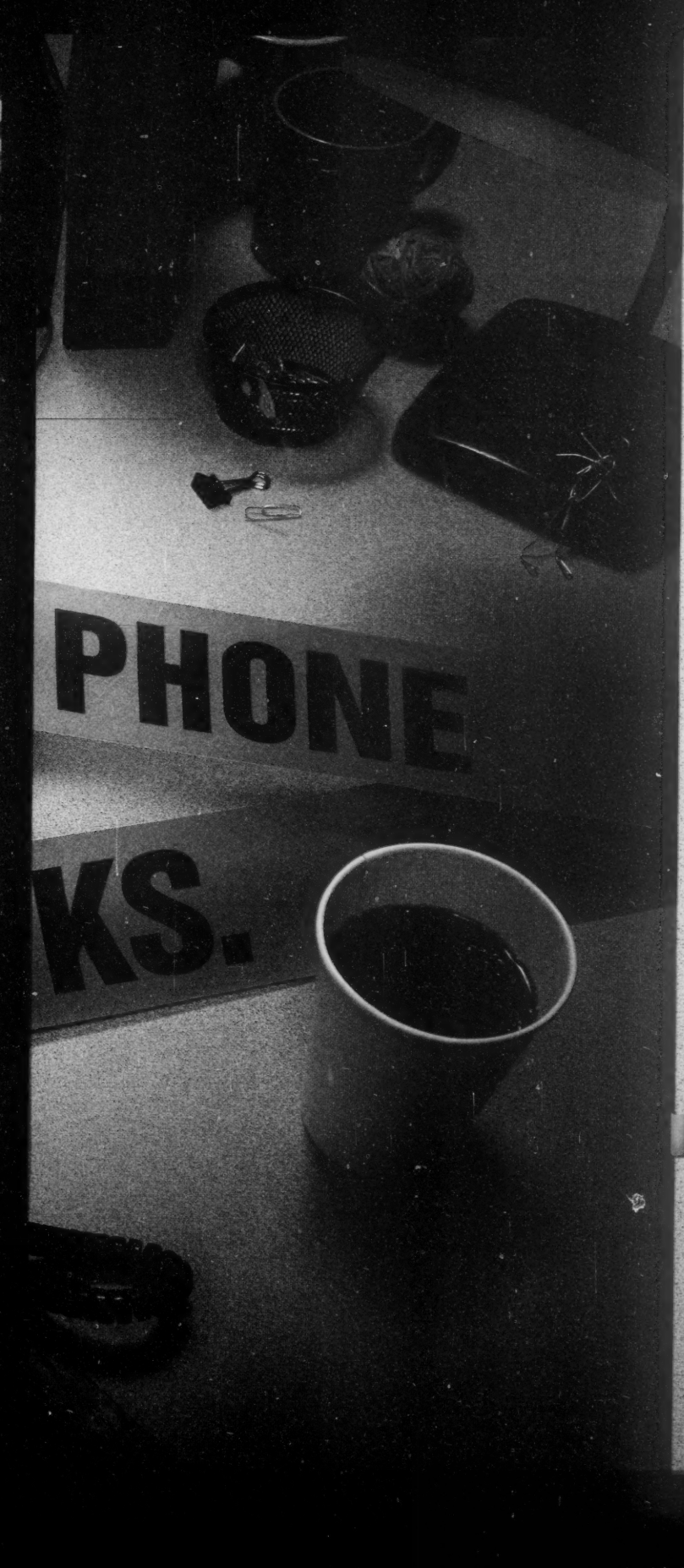
TEACH YOUR OLD
NEW TRIC



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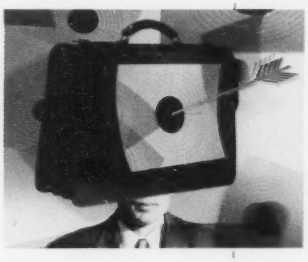

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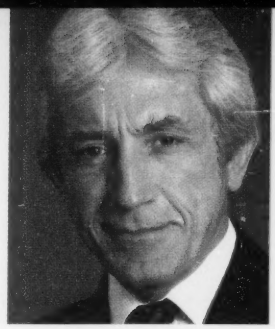
■ EDITOR'S NOTE

Don Tennant

Dealing With Reality



THE HAND-WRINGING began in earnest a couple of weeks ago when Citibank, Merrill Lynch and other financial services giants announced that they were turning to countries like China, Singapore and Kuwait for the billions of dollars they desperately need to cover their losses from the mortgage meltdown. Now, as the U.S. IT industry giants increasingly look overseas for the business and investment they need to stay in the black, IT hands will be doing much of the wringing.

The idea of the wealthiest, most powerful nation on Earth being forced to depend so heavily on foreign investment for its economic well-being is repulsive to some, uncomfortable for many. So when we reported online last week that IBM, the quintessential American IT company, relies on foreign interests for nearly two-thirds of its business and is positioning itself as a champion of globalization, many in the IT community were no doubt troubled.

The simple fact is, globalization is inevitable. So if you're one of those people who have a problem with that, you have some changing to do.

I fully expect to hear from a fair number of IT pros in the trenches who will express their disgust with that proclamation from my ivory publishing tower. But there's a very fitting analogy at work here. We in publishing have also had to face the inevitable and choose whether to fight it or embrace it.

All of us with any kind of tenure in this profession have lived and breathed the printed page throughout our careers. Yet with the surge in online publishing and the relentless decline of print, we've been left with a choice: We can stubbornly cling to the comfort of print, or we can embrace the opportunity that online affords.

At *Computerworld*, the choice was easy, a no-brainer. It's executing on the choice that's difficult. It required us to adapt, to retrain, to let go, to explore, to learn, to risk, to try, to accept. No longer could we thrive in the insularity of print. We've had to welcome the expanse and the unfamiliarity of online. Failing to do so would have meant our demise, because what we faced was unstoppable.

■ Nothing short of a seismic shift in thinking will enable us to deal effectively with the reality of globalization.

There is nothing more unstoppable than globalization. It is happening, and it will continue to happen, only at an accelerating pace. And nothing short of a seismic shift in thinking will enable us to deal effectively with that reality. Perhaps a quick anecdote will clarify what I mean.

In the late '90s, when I was living and working in Hong Kong, I met a guy named Lee Richardson, who at the time was the director of Asia-Pacific operations at SAS Institute, the North Carolina-based business intelligence software vendor. In those days, it wasn't uncommon for the executives in charge of the region to live in the U.S., and that was the case with Richardson.

"I feel like I have, from a personal point of view, the best of both worlds," Richardson told me. "I get to live in wonderful North Carolina, which is a great place to live; and at the same time, I get to deal with some of the most exciting cultures and countries and economies and people in the world, like China, India, Korea, Hong Kong. So I just feel like I'm a very lucky person."

My reaction to that comment was recorded in a column I wrote shortly thereafter.

"Isn't that just super? Lucky Lee has the best of both worlds. He gets to do all those fun things in our world without having to actually live in it," I wrote. "I cannot be alone in my concern that [Richardson's] 'best of both worlds' comment bespeaks a we-and-they mind-set that is alien to the type of global orientation that successful businesses need to foster."

I concluded with this reminder: "There aren't two worlds, Lee. There's only one."

Recognizing that fact, and altering our outlook accordingly, is the seismic shift that will inevitably occur. Those who fight it will be left languishing in futility. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

You Can't Blame It All on Technology

The article "The Most Wired School in America" [*Computerworld.com*, Jan. 8] made some good points. It ended with a section called "The Downside of Technology," which mentioned the problem of rampant plagiarism now that it's so easy for students to cut and paste things from the Internet.

But students have always been ignorant; that's why they're in school. If they turn in shoddy, plagiarized work, it doesn't matter whether they used technology or not. It's our job to teach them to do better with the tools they have, whatever the tools may be.

Back in 1994, when I taught my first class, a student painstakingly copied an article about tennis from a paper encyclopedia. What's the difference between that and a little cut and paste from the Internet? Perhaps that the task took longer, and the book was harder to find.

It may be easier for students to find facts, but that only does them good if they know how to assimilate them into a meaningful construct.

■ **Amy Minter Mayer**, *district instructional technology specialist, Conroe Independent School District, Conroe, Texas, amayer@conroeisd.net*

Redefining SaaS

Things are not quite as simple as Nicholas Carr wants to make us believe ["Q&A: Nicholas Carr on the Big Switch to Utility Computing," *Computerworld.com*, Jan. 17]. CRM systems and ERP systems and the business processes behind them are pretty complex and still provide quite a substantial competitive edge for companies — an edge they lose in SaaS or utility computing models.

But in other areas, hardly anyone is differentiated from the competition. These include e-mail, backing up data, archiving and the compliant storage of information. Soon, specialist vendors with storage, backup or e-mail management as their special expertise and with economies of scale will help companies drive down costs and free up resources for IT projects that actually make a difference. Perhaps one will use the term "SaaS" soon to mean "storage as a service."

■ **Stephan Haux,** *Waldsee, Germany*

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Big IT to Small Biz: Listen Up, Little Dudes!

Large corporations have a lot to teach small businesses – like these six lessons (some painfully learned).

Security Policy, Compliance and You

Most companies that establish security policies promptly ignore at least some of them. Anton Chuvakin details what three sets of regulations – HIPAA, PCI DSS, and FISMA – would say you're risking with that approach.

Hopping on the UCC Express

Things to keep in mind when pursuing unified communications and collaboration.

Review: Microsoft Office For Mac 2008 – Better Than iWork?

Microsoft's latest version of Office for Mac includes some nifty interface improvements and a bunch of new features. Should you switch?

Opinion: Hyperconnectivity, Here We Come

All of your gadgets want Internet access, but will carriers screw up the pricing? Mike Elgan says it's time for the consumer electronics industry and cell phone carriers to get busy and build the plans, partnerships and devices that will enable the new era of hyperconnectivity.

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News Digest

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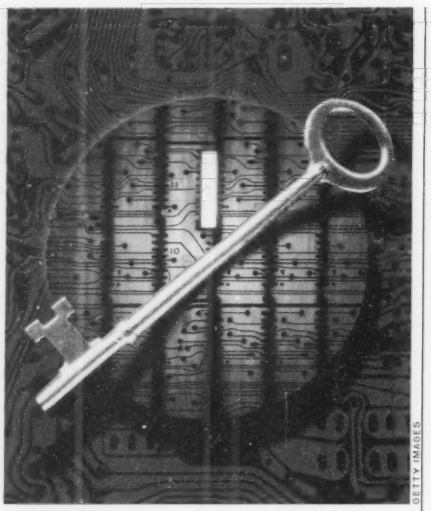
THE WEEK AHEAD

MONDAY: The Demo 08 conference, which focuses on emerging technologies, opens in Palm Desert, Calif.

THURSDAY: Google plans to report its fourth-quarter results. Also due to release earnings reports are VMware on Monday, EMC on Tuesday and SAP on Wednesday.

THURSDAY: A federal judge is expected to rule on whether key provisions of the antitrust consent decree signed by Microsoft in 2002 should expire or be extended to 2012.



GETTY IMAGES

SOFTWARE

EMC Locks Up Hosted Backup

LAST WEEK, EMC Corp. unveiled a hosted backup and recovery service that uses technology gained from its $76 million acquisition of Berkeley Data Systems Inc. in September.

MozyEnterprise, the first offering in the company's new Fortress hosted product line, provides subscription-based online backup and recovery services for remote Windows PCs and Windows Servers, according to Roy Sanford, vice president at EMC's new software-as-a-service (SaaS) business unit.

The hosted offering combines technology from three Berkeley hosted-storage products — MozyHome, MozyPro and MozyEnterprise, Sanford added. MozyEnterprise also includes new features such as RSA Security authentication, authorization and key-management capabilities, he said.

In addition, the product adds a new physical data-seeding option that stores information on a hard drive that EMC uploads directly onto its hosted systems. Such a feature can save time and bandwidth for customers, Sanford said.

He also noted that user data is encrypted prior to being uploaded to the host server.

Aimable Mugara, IT director at Free The Children, a nonprofit organization in Toronto, said the data-seeding option could ease companies' concerns about bandwidth issues or having to spend hours moving from physical to online storage.

Free The Children, which provides education and development programs to children in 45 countries, has been using MozyPro for six months to back up 1TB of data every two to three days, Mugara said.

Mugara, whose IT operation is spread across the world, said he turned to online backup to ensure that critical project information is always accessible and does not fall victim to lost or stolen devices. The organization anticipates that because EMC is a larger company than Berkeley, it will provide better service than the latter did, Mugara added.

MozyEnterprise is aimed at home users, small-to-midsize companies and large corporations. It is sold by EMC and resellers such as Verizon Business and Broadview Networks Holdings Inc., the company said.

Sanford declined to discuss EMC's further plans for the new Fortress line of SaaS offerings.

For PCs and laptops, MozyEnterprise is priced at $5.25 per month plus 70 cents per month per gigabyte stored. The monthly price jumps to $9.25, plus $2.35 per gigabyte stored for servers.

The service is available now, the company said.

— Brian Fonseca

SECURITY

D.C. Fires, Disciplines Workers For Visiting Porn Sites

DISTRICT OF COLUMBIA officials said last week that they planned to fire as many as nine employees for using their work computers to visit an "egregious" number of pornographic Web sites.

Another 31 workers were suspended or reprimanded following an investigation that began Dec. 15, after an employee filed a complaint.

The city's IT unit conducted a forensic analysis on 10,000 PCs equipped with content-filtering software, and the sanctions were "based on hit counts" for pornographic sites, according to a statement issued by the mayor's office.

Vivek Kundra, the city's chief technology officer, said the filtering tools tracked Web surfing but didn't block access to sites. The city has installed another 20,000 copies of the software, from Websense Inc., to do filtering on all PCs. In addition, Kundra said users now will be redirected from porn sites to a page about the city's computer usage policy.

– JAIKUMAR VIJAYAN

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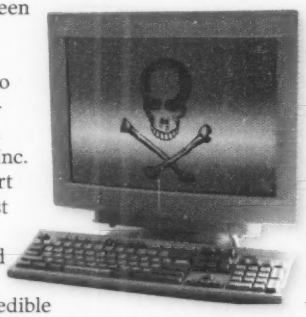
CYBERCRIME

Most Malware Is Launched From Legit Web Sites

THE MAJORITY of Web sites serving up attack code are legitimate domains that have been hacked by criminals, according to security research firm Websense Inc.



In a report released last week, San Diego-based Websense said that credible sites accounted for 51% of those classified as malicious. The sites had been compromised by hackers who seeded them with attack code that infected unpatched machines visiting those addresses, it said.

A year earlier, Websense estimated that about 35% of malicious sites were actually legitimate sites that had been compromised.

The remaining deleterious sites were "intentionally built for malicious intent," the Websense report said.

Hacking legitimate sites so that they can sling malware gives attackers distinct advantages, said Dan Hubbard, vice president of security research at Websense. "It's a great vector, because they don't need to drive users to the sites, they get free hosting, and [it's] hard to trace ownership," he said.

"The trend has definitely been accelerating," said John Pescatore, an analyst at Gartner Inc. It has become "harder for criminals to do the more traditional kind of phishing attacks."

He noted that hackers have been aided by "the growth in social networking sites and blogs, where security is just not one of the ingredients. Hackers are saying, 'It's easier to put our malware on these sites than to build our own.'"

Pescatore said the growth of Web 2.0 technologies and mashups "may make this even worse. If I can trick you into mashing up stuff from my sites on yours, then I can put malicious code in your mashups."

He suggested that users install what Gartner calls "Web security gateways," the URL-blocking tools available from security companies. "We're also telling them to turn on the inbound Web filtering that detects malicious code," Pescatore added.

An example of such hacks occurred about a year ago, when the Web sites of the Miami Dolphins football team and Dolphin Stadium, site of the 2007 Super Bowl, were hacked to serve malicious JavaScript code that tried to load a Trojan horse onto unpatched PCs that visited the sites.

— *Gregg Keizer*

Short Takes

IBM last week acquired AptSoft Corp. in Burlington, Mass., to expand its line of service-oriented architecture products. Terms of the deal were not disclosed. IBM said that the business event processing software from the privately held company will be added to its WebSphere line.

Mozilla Corp. said that its engineers are working to fix what it called a low-severity flaw in its Firefox browser that could give attackers unauthorized access to data on a victim's machine.

Microsoft Corp. has dropped its prohibition on running Vista Home Basic and Vista Home Premium in virtual machines. It had cited potential security problems and a lack of interest in virtualizing Vista for the earlier restriction. Officials weren't available for comment.

IBM and SAP AG disclosed at the Lotusphere conference that they are jointly building a tool, code-named Atlantic, to help users bring SAP ERP data into Lotus Notes collaboration systems.

SECURITY

Data Breach Affects 650k Customers of 230 Retailers

An unencrypted backup tape containing credit card information on customers of 230 U.S. retailers was discovered missing in October, the company responsible for the data confirmed earlier this month.

GE Money USA, which manages in-store credit programs for retailers, said the tape held credit card information on about 650,000 customers.

The General Electric Co. subsidiary said the tape contained the Social Security numbers of 150,000 of those customers.

A GE Money spokesman confirmed that J.C. Penney Co. was affected by the breach, but he declined to identify other retailers whose data was on the tape.

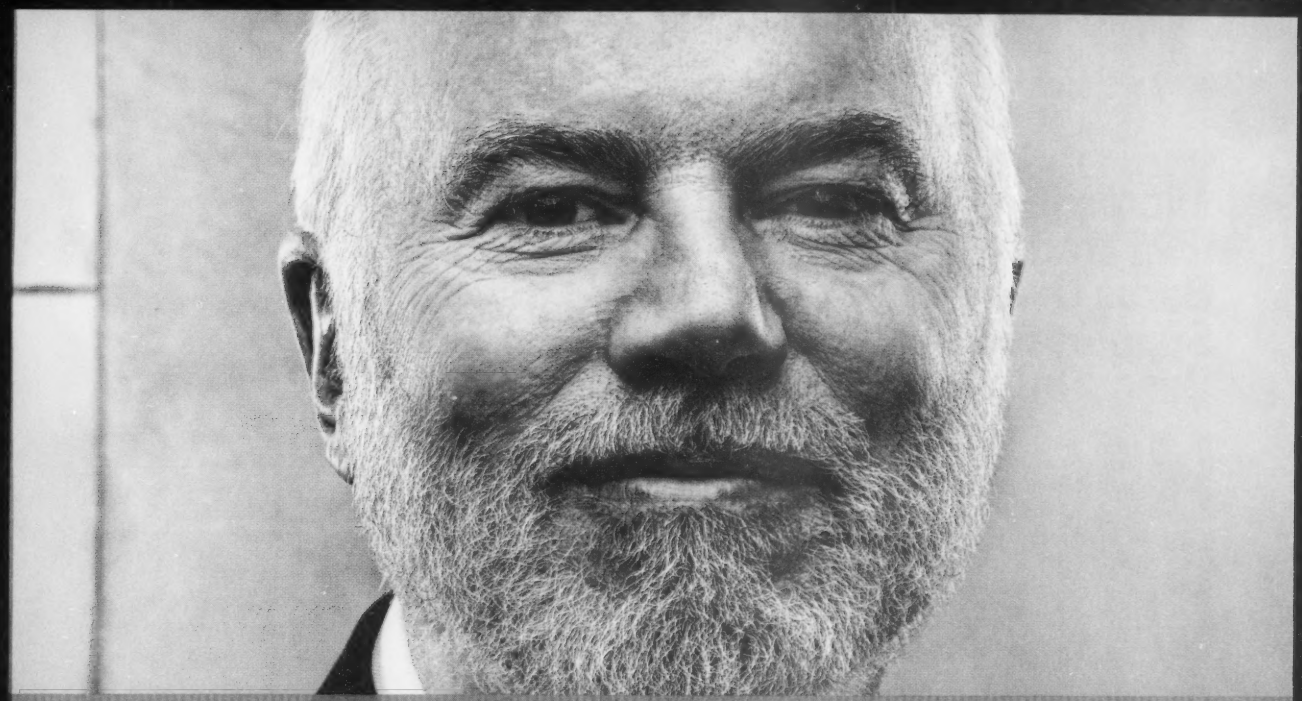
The spokesman said the tape was found to be missing from an Iron Mountain Inc. facility in October. "We were informed that one of the tapes could not be located. But at the same time, there was no record of it ever having been checked out," the spokesman said.

> **"We were informed that one of the tapes could not be located. But at the same time, there was no record of it ever having been checked out."**
> **A GE MONEY SPOKESMAN**

An Iron Mountain spokesman said that the firm regretted the incident, but he added that there is "zero evidence that the media has been obtained by unauthorized people and misused in any way."

GE Money has set up a toll-free number for customers and is offering free credit-monitoring services to those affected.

– ROBERT McMILLAN, IDG NEWS SERVICE



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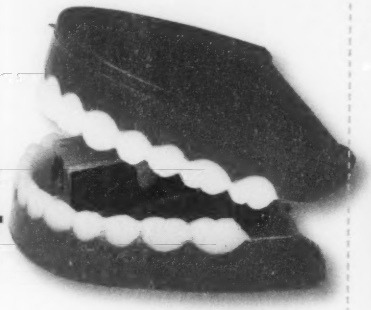
OPEN SOURCE

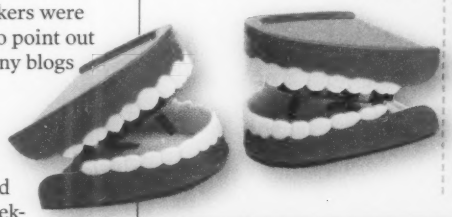
Microsoft, IBM Trade Barbs Over Support for Open XML



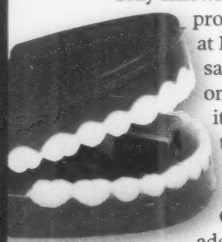
NO COMPANY has invested more time and effort in lobbying against the use of Microsoft Corp.'s new Office Open XML document format than IBM has.

But it turns out that IBM itself is supporting Open XML in a handful of products — a fact that some Microsoft workers were only too glad to point out in their company blogs this month.

Open XML is the native file format in Office 2007, and Microsoft is seeking to have it accepted as an ISO standard. According to documentation on IBM's Web sites, the company currently supports the format to some degree in at least four products, including its DB2 9 pureXML database.



Gray Knowlton, an Office product manager at Microsoft, said in his blog on Jan. 18 that it was "good to see IBM leading the charge on Open XML adoption." Another blogger at Microsoft wrote, "Welcome to the party, IBM."



IBM didn't respond to a request for comment. But Rob Weir, an IBM developer who is involved in document-format issues, wrote in his personal blog that IBM's support for Open XML is pro forma and generic.

For example, he said that DB2 9 pureXML "supports any well-formed XML document or fragment." Weir added that Microsoft's "desperation in trying to dredge up examples of support" for Open XML was "pitiful."

— *Eric Lai*

BETWEEN THE LINES *By John Klossner*

BENCHMARKS LAST WEEK

Intel Corp. released the first dual-core version of its Celeron processor and now has multicore chips in all of its mainstream product lines.

Gartner Inc. said IBM was the top vendor of IT services in India last year, with an 11.2% market share. That put it ahead of India-based Tata Consultancy Services Ltd. and Wipro Ltd.

TWO YEARS AGO: The Federal Trade Commission imposed a $10 million civil penalty against ChoicePoint Inc. for a security breach that compromised the financial records of more than 160,000 people.

Global Dispatches

Estonian Student Fined for Attack

TALLINN, ESTONIA – A 20-year-old Estonian student has been fined 17,500 kroons ($1,652 U.S.) for participating in a cyberattack that paralyzed Estonian Web sites last spring and soured the country's relationship with Russia.

Gerrit Maesalu, a spokesman for the Northeast District Prosecutor's Office here, said that Dmitri Galushkevich used his home PC to launch a denial-of-service attack against the Web site for the political party of Estonia's prime minister for several days in April and May.

The attacks occurred after the Estonian government decided to relocate a Soviet-era World War II memorial. Ethnic Russians in Estonia rioted, and cyberattacks ensued. Russia denied involvement. Estonian police are still trying to find others who may have been involved in the attacks.

Jeremy Kirk,
IDG News Service

High Indian Wages Blunt Wipro Profit

BANGALORE, INDIA – Wipro Ltd., India's third-largest outsourcer, reported disappointing profits for the quarter that ended Dec. 31 and attributed the performance to increasing wages for Indian workers and its purchase of Leonia, N.J.-based service provider Infocrossing Inc.

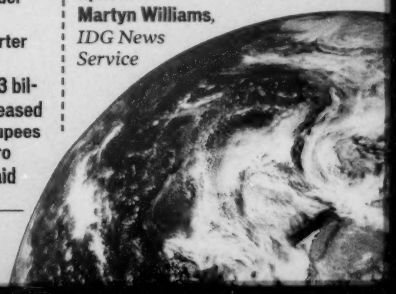
Wipro said fourth-quarter revenue grew 32% to 52.36 billion rupees ($1.3 billion U.S.) but profits increased just 11% to 8.26 billion rupees ($209 million U.S.). Wipro Chairman Azim Premji said the results were not affected by the declining U.S. economy. Suresh Senapaty, Wipro's chief financial officer, said the company employed 79,832 people on Dec. 31, with 59,925 in IT services and products and 19,907 in its business process outsourcing unit.

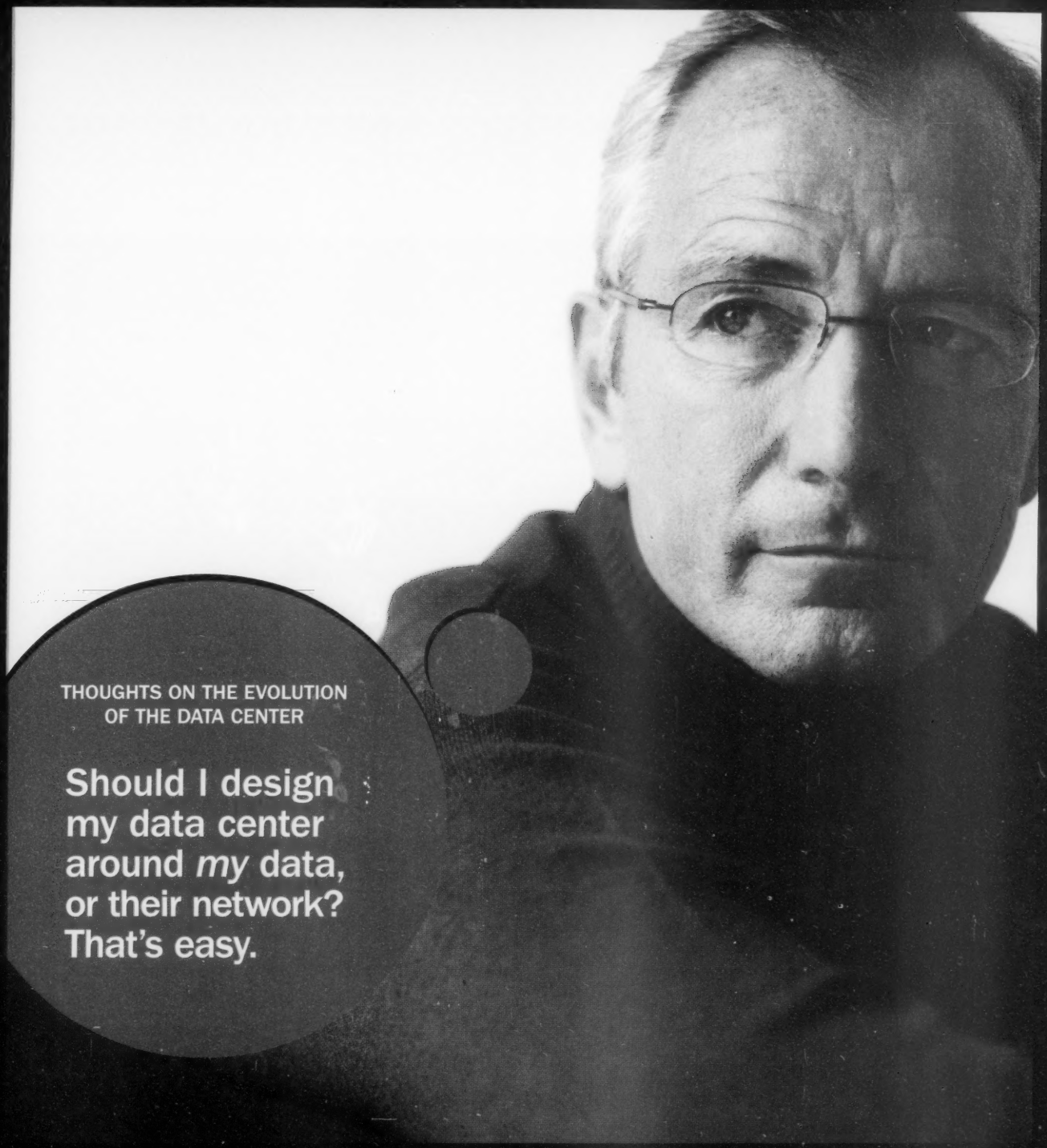
John Ribeiro,
IDG News Service

BRIEFLY NOTED

Sanyo Electric Co. in Osaka, Japan, will sell its mobile phone business to Kyocera Corp. in Kyoto, Japan, as part of a restructuring. The deal, valued at ¥50 billion ($468 million U.S.), is expected to be completed by April 1.

Martyn Williams,
IDG News Service





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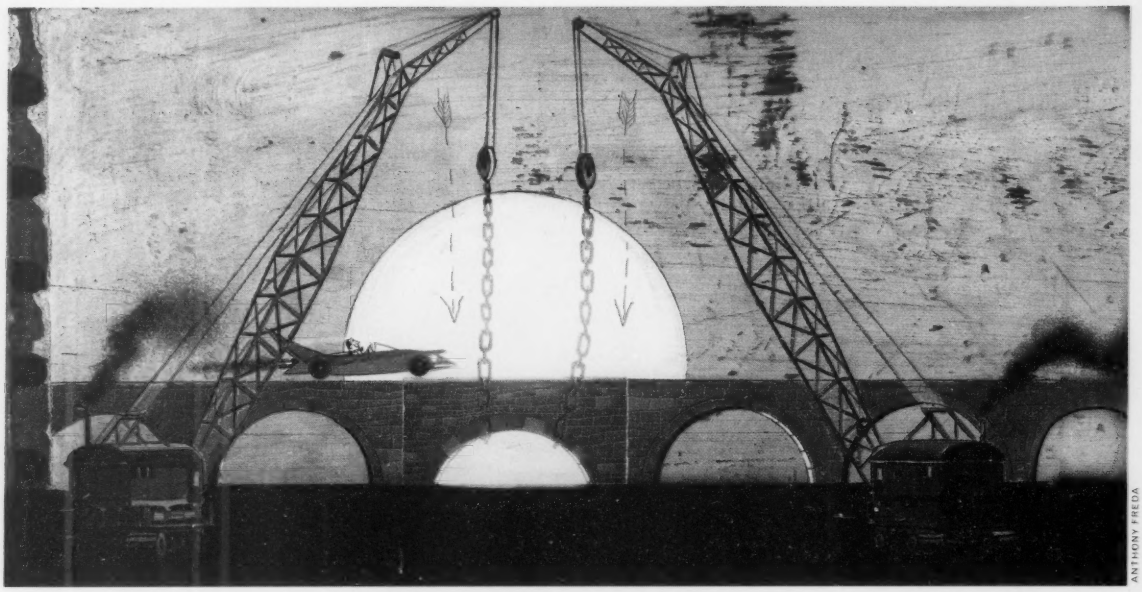


Emerging Technology Promises to Bridge Web, Desktop

Nasdaq and the American Cancer Society use a new runtime for next-gen apps.

By Heather Havenstein

NASDAQ Stock Market Inc. and the American Cancer Society Inc. are looking to Adobe Integrated Runtime technology to take some of their rich Internet applications to the desktop.

The new AIR technology from San Jose-based Adobe Systems Inc. is among several emerging products that promise to let companies run Web applications built using various AJAX tools on desktop systems. AIR is slated to ship next month, according to Adobe.

Nasdaq and the American Cancer Society are among several large organizations eyeing the Adobe runtime technology as a way to bridge the traditional gap between Web and desktop applications.

Claude Courbois, associate vice president of data product development at Nasdaq, said that he has long been searching for tools to help the stock market's analysts and brokerage customers comply with stringent U.S. Securities and Exchange Commission rules much faster.

For example, one of the SEC rules requires that brokerages provide a tool that can quickly re-create market conditions to prove to customers that they received the best price available for a stock. But traditional development technology isn't capable of building such a tool, Courbois noted.

Today, Nasdaq analysts spend hours using statistical software from SAS Institute Inc. on the desktop to re-create market conditions when necessary.

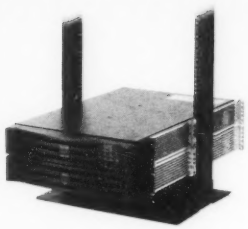
After gaining access to a beta version of AIR this summer, the stock exchange swiftly built a single application that can simultaneously access Web and desktop data, Courbois said.

Built using Adobe's Flex development tool set, the rich Internet application, known as Nasdaq Market Replay, can provide a replay of a trade — and associated prices on different markets — in seconds, Courbois said.

The software runs on the desktop, relieving servers of a good deal of data-intensive processing, he noted. "We saw the ability to process the data halfway on our servers and have it in as small a package as possible. Then, when someone requires a replay of the market, we send a small packet of data to desktop," he said.

The new Nasdaq applica-

Continued on page 14



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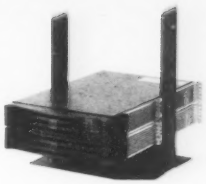

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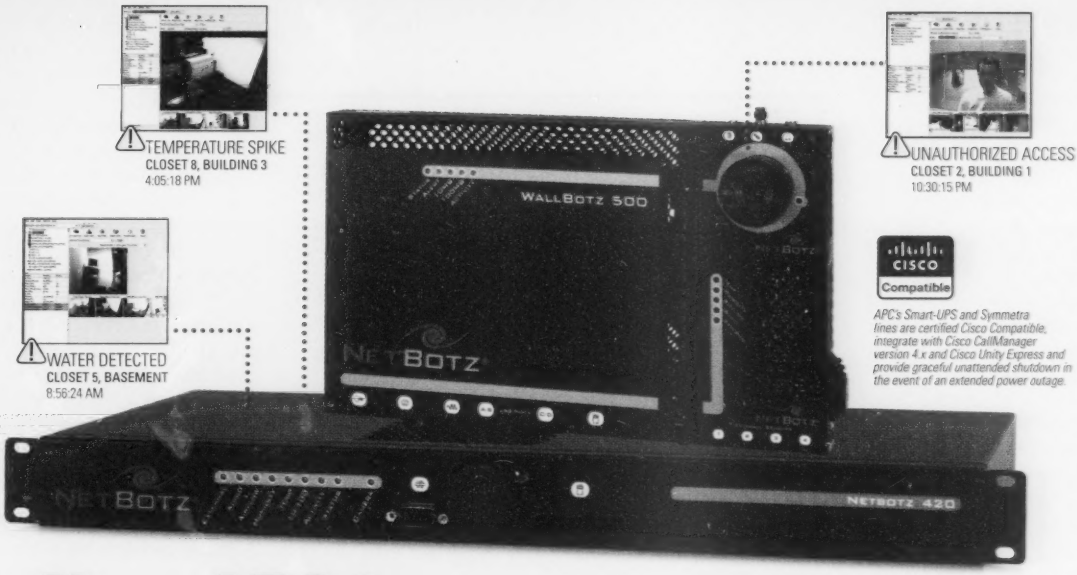

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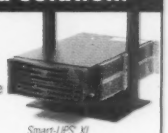

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Continued from page 12

tion is slated to begin rolling out to in-house analysts and client brokerages next month, coinciding with the expected release of AIR 1.0, Courbois added.

Adobe describes AIR as a runtime environment for building rich Internet applications in Adobe Flash, HTML and AJAX. The package includes the Safari WebKit browser engine, along with APIs to support desktop features like native drag-and-drop and network awareness, Adobe said.

In addition to Adobe, Microsoft Corp. and Mozilla Corp. are maneuvering to gain a foothold in providing tools to help companies build next-generation rich Internet applications that run on the Web and desktop systems.

Microsoft, for example, has come out with an initial version of Silverlight, a plug-in that supports multiple browsers and operating systems and is designed to support desktop-based animation, interactive features and video in Web applications.

Mozilla Labs, the research arm of Mountain View, Calif.-based Mozilla, in October disclosed that its Prism software, which is now under development, will let Web users strip a Web application from the browser and use it as a traditional desktop program.

The new technologies are intended to enable Web developers to build desktop applications, significantly cutting the need for expensive programming talent.

"You don't have to be a C++ programmer to build a desktop application anymore," said Mike Downey, Adobe's group manager for evangelism in its platform unit.

"We've always hesitated in launching into building [Nasdaq Market Replay] because it is so data-intensive. It seemed like an overly ambitious project. The amount of data it takes to get to this level of detail is beyond what you could do on a normal Web application.

CLAUDE COURBOIS, ASSOCIATE VICE PRESIDENT, NASDAQ

That was a big selling point for Adam Pellegrini, strategic director of online at the American Cancer Society, who called on his staff to prepare to use AIR immediately after Adobe announced the public alpha release early last year.

"[AIR] reduces one step from the design process, which accelerates your product life cycle," said Pellegrini. "If you have a Flash programmer, they can hit the ground on Day One."

Since the Atlanta-based charity began working with a beta version of the technology last spring, developers have created an application that integrates Google Maps with some desktop Web services, allowing users to find the location of cancer treatment resources by entering a ZIP code.

The group is also using Flex to create an AIR-based portal that physicians will be able to use to access the Cancer Society's information over the Web and then use the data offline, he said.

Jeffrey Hammond, an analyst at Forrester Research Inc., predicted that AIR will capture the interest of many organizations, especially those running aging client/server applications built using fourth-generation languages or Microsoft's Visual Basic tool set. AIR can be used to re-create such software as Web-desktop applications, he added.

"In those sorts of situations, AIR is a very nice fit to take what is working today and [update] it," Hammond said. "There are a lot of aging applications out there that have a richer user experience than what traditional Web applications have had up to this point."

SECURITY CONCERNS

However, Hammond also predicted that browsers will continue to be the preferred application-delivery vehicle at some sites because of AIR's dependence on Adobe's Flash Player. He also noted that other sites may not give users permission to use AIR in some cases because it could pose security problems.

"This stuff really hasn't been tried before," he said.

"Developers might think they are doing validation on the client so they won't have to do validation on the server, but you have to do it in both places," Hammond said. "You do it on the server because you assume any client is untrustworthy."

Paul Giurata, managing partner at Catalyst Resources, a San Mateo, Calif.-based IT services firm, said that most of his clients are moving away from the desktop altogether in favor of hosted systems. Catalyst builds user interfaces and AJAX applications.

"The trend we have seen is almost all people developing new software applications are moving toward the software-as-a-service model," he said. "Over 80% of [our clients] have said they don't want to have to distribute software."

But some companies using hosted development offerings could nevertheless use AIR.

For example, Coghead Inc., a provider of hosted development tools in Redwood City, Calif., announced this month that it had rebuilt its technology in Adobe's Flex, in part to prepare itself to embrace AIR.

Indeed, Paul Fu, vice president of corporate development and CIO at Taiwan-based international freight and logistics company Morrison Express Corp., said his users have been asking for the type of offline synchronization that AIR will provide. Morrison tapped Coghead to build its hosted CRM tool, Fu added.

"[Offline synchronization] would be very big for us," he said. "Having access to your data in an offline capability would be a huge boon to us. Sales representatives are not always near a computer, and [online access] doesn't help you when you are on an airplane."

Dana Gardner, an analyst at research firm Interarbor Solutions LLC in Gilford, N.H., said that the interest in AIR-type tools by SaaS providers is a good indication that people will take notice of the technology. ■

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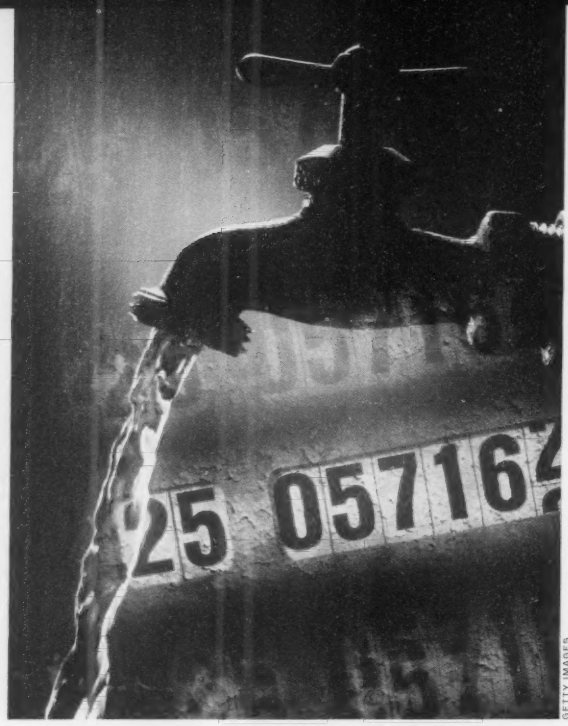

GETTY IMAGES

Philadelphia's 'Ocean' Finally In Full Flow

Software and project management changes help bring the city's 20-year quest for a new water-billing system to a successful conclusion.

By Matt Hamblen

THIS MONTH has brought Philadelphia a new mayor and — at long last — a new water-billing system to replace a 30-year-old mainframe application that had forced city workers to continue using punch cards.

The billing-system initiative, known as Project Ocean, was once a high-priced mess for the city, which suspended development from October 2005 to December 2006 in order to revise the project plan.

But Philadelphia CIO Terry Phillis said the new system finally went live on Jan. 2, meeting the goal of having the project finished before then-Mayor John Street left office five days later.

The rollout also kept to a schedule that Phillis laid out last summer, after the city's controller issued a report criticizing local officials for a series of project management lapses over the course of a 20-year effort to replace the mainframe billing system. Before work even began on Project Ocean in 2002, three earlier projects had been abandoned.

In contrast to the earlier problems, Phillis said, Project Ocean's final phase took less time and money to complete than expected. The new system was finished in 12 months instead of the projected 13, he said, and the work cost $5.7 million rather than the $6.7 million that had been budgeted.

"We had to spend a lot of time upfront deciding how to run this and how to collaborate between three departments."

TERRY PHILLIS, PHILADELPHIA'S CIO

The eventual success was partly the result of a software switch. The city scrapped most of the Oracle applications it had planned to use and replaced them with off-the-shelf water-billing software developed by Prophecy International Pty. in Adelaide, Australia.

But the real key, Phillis said, was proper project management — making sure that the right leadership, collaboration and work processes were in place.

Before the project was restarted, "we had to spend a lot of time upfront deciding how to run this and how to collaborate between three departments," he noted.

To oversee the final phase, Phillis pulled together a team of managers from within IT, the water department and the city's water revenue bureau. He took charge of the software integration work himself.

Johanna Rothman, a project management consultant and author, said that having transparent processes such as the ones adopted in Philadelphia is critical to improving internal communication. It also helps project managers monitor and adjust development criteria as needed, said Rothman, president of Rothman Consulting Group Inc. in Arlington, Mass.

Good project managers serve as both "glue and grease" within organizations, she noted. "They glue people together and grease the skids to make them work together, making it possible to see how the interdependencies work. Not knowing the interdependencies can kill you every time."

A lot of greasing was needed in Philadelphia because of the age of the custom-built mainframe billing application. "Converting this thing over was a huge effort," Phillis said. "We had to deal with 30 years of garbage data in the old system."

According to Phillis, the final tab for Project Ocean was $17.7 million, after Oracle agreed to pay or forgive $6.9 million in costs. The new system is expected to be more accurate and easier to modify than the old one. And Phillis has a plan for the $1 million saved in the final phase: It will be used to set up self-service water and sewer billing applications on the city's Web site. ■

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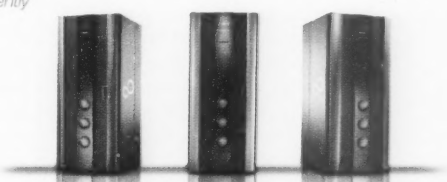

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On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Are Documents Apps?

APPLICATION LOGIC is being embedded in electronic documents, changing the nature of static files. That's the view of Jake Sorofman, vice president of marketing and business development at Tokyo-based JustSystems Inc. As an example, he points to manuals used by airport ground crews — the documentation changes as temperatures drop and de-icing is called for. He also suggests that role-based access to portions of files is another example of how once-static files have become dynamic documents and, effectively, applications. XML is the primary force behind this shift to thinking of docs as apps. To further that trend, Sorofman says, JustSystems (which, he adds, is the largest Japanese software vendor) will upgrade its XMetaL Author Enterprise product to make it easier for non-technical writers to create dynamic, XML-rich files. He says XMetaL 5.1 lets novice technical writers produce documents "in topic-oriented, XML chunks" that conform to the OASIS Darwin Information Typing Architecture standard and are designed to foster efficient reuse and interplay of content. Sorofman says that JustSystems wants to "embed the culture of XML to all content authors." XMetaL 5.1 starts at $1,195 per user.

XML can turn documents into dynamic applications, Sorofman says.

Alive Predicts Deadly IT Problems

"People are not used to working with predictive alerts," contends Steve Henning. "They're used to a reactive mode." He's the vice president of products at Integrien Corp. in Irvine, Calif. And, yes, his company does offer an IT management tool (called Alive) that uses predictive analytics to anticipate problems *before* your operations staffers are running around with their hair on fire. Because the software stores a "fingerprint" of previous conditions that led to a problem, it can see trending data and warn you when a similar situation is rearing its ugly head. Alive 6.0, which began shipping last week, boasts a new user interface, says Henning. It also lets you set combinations of attributes that allow you to receive just a single alert when those combined values reach a certain level. The upgrade can track 4 million metrics for up to 100,000 devices. Pricing starts at around $125,000.

Drivers Keep VMs on Track

Once you get beyond 100 or so virtual machines, managing them gets to be "a bit tricky," says John Suit, chief technology officer at Fortisphere Inc. in Chantilly, Va. He claims that VM technology has been optimized for performance and tuned for automation, but at the expense of inherent system management capabilities. Hence, Fortisphere's release last week of its Virtual Insight software, which is designed to produce about 60 reports on your VM environment, including one that offers a complete inventory of all your VM-based applications and detects rogue virtual machines. Suit says Fortisphere's tool delivers granular detail because its approach is to eschew agents and instead use "micro-kernalized device drivers" that run in each VM instance. He argues that this approach produces better performance and can extract more information from the VMs. Come spring, Fortisphere will release a product called Virtual Foresight that will let you set and enforce IT and business policies for VMs, such as who can or cannot create a VM or which applications can be virtualized. Virtual Insight starts at $10,000. Pricing for Virtual Foresight has not been set. ■

Suit: Get the 411 on your VM environment.

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■ THE GRILL

Patricia Curley

The **New England Patriots' IT quarterback** talks about **wiring a stadium,** fixing **game-day blips** and **watching the game** the fun way — **at home.**

Dossier

Name: Patricia Curley

Title: Vice president of IT

Organization: The Kraft Group, owner of the New England Patriots; its holdings also include packaging, real estate and entertainment businesses.

Location: Foxboro, Mass.

Favorite movie: *An American in Paris*. "I love all Gene Kelly movies, and *American in Paris* includes 'Rhapsody in Blue,' my favorite piece of music."

Favorite nonbusiness Web site: "Matchmine.com is fun. You get great movie recommendations."

Any Super Bowl predictions? "I would have to defer to [Patriots] Head Coach Belichick."

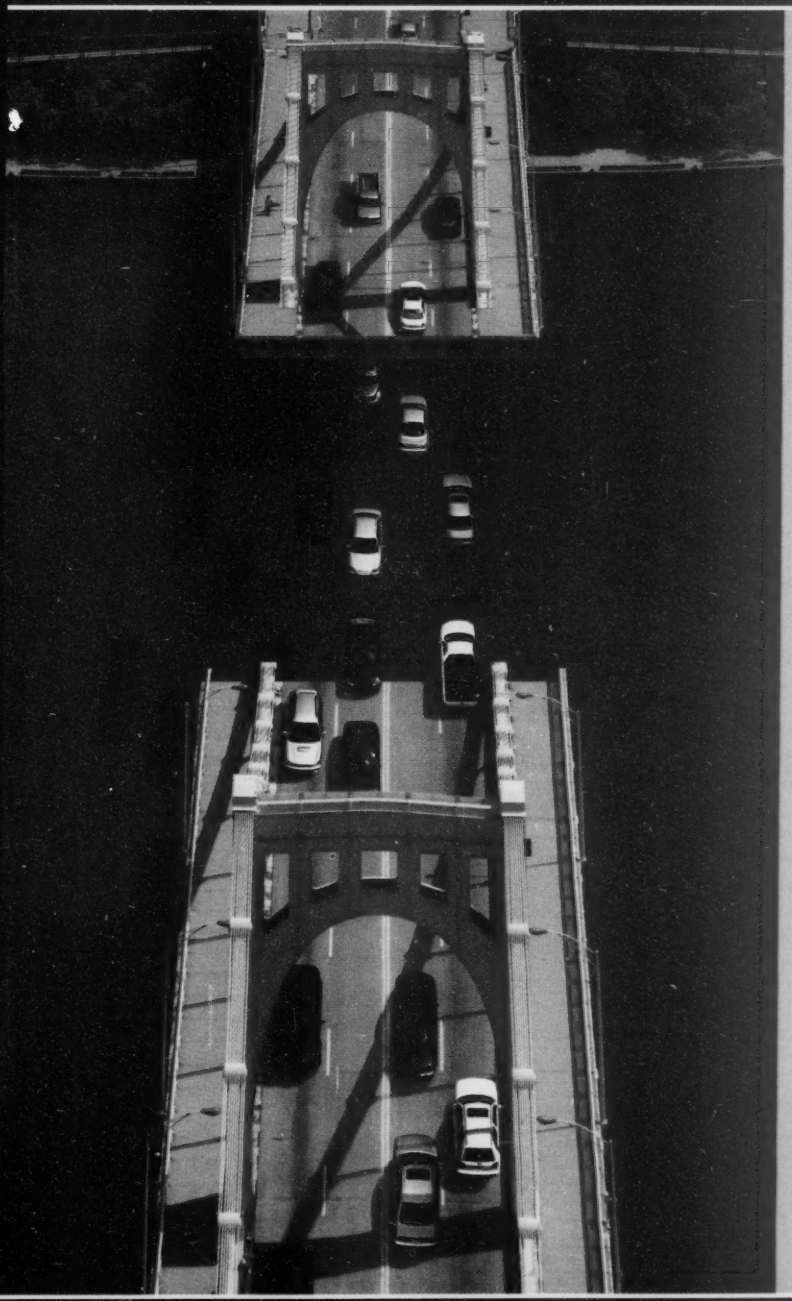
What does your job as the CIO of The Kraft Group entail? I can tell you, thanks to the Krafts [the family that owns the business], it's the best job on the planet, and I don't know that there are many like it. I work with trying to set some standards and policy, infrastructure, security, applications for their manufacturing companies as well as service companies, sports and entertainment, hospitality. It's staffing, and policy and procedure, and operations, and good service level of help desk and security tools, and Internet bandwidth and infrastructure.

Is the infrastructure for the companies centralized or decentralized? The Kraft Group is a [Windows shop] with a decentralized infrastructure, although there are WAN points, so we have some interconnectivity. That's because the operations are very different.

When there's a need for a Kraft Group employee to access systems at another location, then certainly that connectivity is available. But because the different organizations are different types of businesses, there's not much synergy between the systems that support [the New England Revolution] soccer team and the systems that support box manufacturing. So those are kept totally separate, and for secu-

Continued on page 22

WHEN INFORMATION AVAILABILITY MATTERS



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Continued from page 20

rity purposes, the less that's available, the better.

Can you talk about the systems for the Patriots? Well, no. One of our security tenets is that the less we talk about it, the less we expose.

What about storage? In terms of storage, the Patriots have a partnership with EMC, but we are an EMC customer as well because we like their stuff. Our storage needs are growing every year. I won't say we're A+ in keeping on top of it, but we are looking at it constantly — monitoring to make sure we have excess capacity and to try and bring in excess capacity when we need it.

[The need for storage] grows like crazy when you have successful teams like these. You get more photos, more requests for team or individual photos that need to be stored for the Revolution and the Patriots, let alone streaming video.

How difficult is it being the CIO of a sports team and being a female? I don't encounter lots of female counterparts in other organizations, but there are lots of females in decision-making and roles of responsibility here.

I believe the job of the CIO is not terribly different in this kind of business [compared with] at a manufacturing company or an investment company. There are many things in common, regardless of the industry. And this role has all of those components.

In addition, there are elements or nuances of the sports and game-day business that are certainly different from the manufacturing world, and I have experience in both the service sectors as well as the manufacturing world. I think it takes having had those experiences to consolidate all [that] in this role as CIO for the Krafts.

What's your biggest challenge or obstacle dealing with the various companies? For me, it's probably time management, to make sure each of the Krafts' organizations is getting the attention it deserves.

Do you have a large group of people helping you? There's not a large group. There's a total of 20. There are four people in addition to myself who cut across multiple organizations, then within the individual organizations there are 15 devoted to the organizations, including the box companies, the Revolution, the Patriots, the stadium and the shopping mall.

What is the Krafts' position on implementing new technology? Do they want to be out in front on everything? Oh, yes. The Krafts are very embracing and supportive of technology, so they want to be on the forefront [if] that makes sense. If we have something that's working great, there isn't pressure to upgrade it, but if there's technology that helps us be more effective, more efficient, they're there to [offer] support.

Is it your job to look for those technologies? I typically look for those things that we need here for the business. If Jonathan or Robert or Dan or Josh [members of Kraft family] becomes aware of something, they'll certainly send a note my way: "Talk to person." "Have you seen this?" That's the way it happens with most organizations.

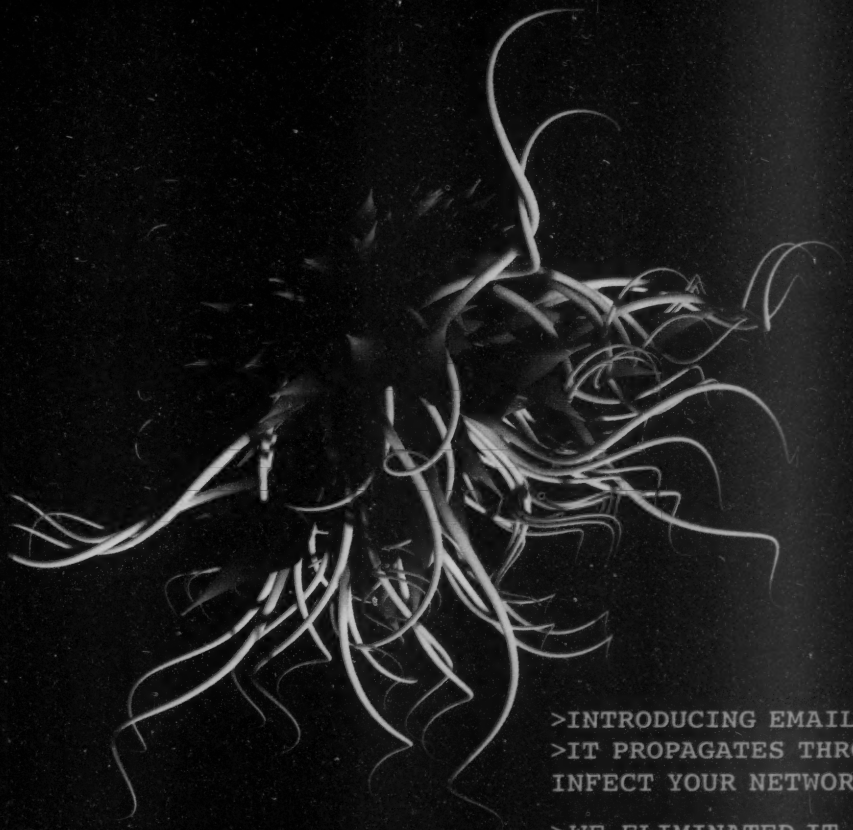
On game day, how difficult is it to support the Patriots, the visiting team, the media? We're pretty familiar with the challenges. We've just finished our sixth year in the new stadium, so we know what the components are. From time to time, if a wireless access point goes down in the stadium, it can disrupt the media. On the other hand, we have plenty of backup hard-wiring and extra access points. So the challenges are if something fails — if the hardware fails — the challenge is to get it repaired as quickly as possible. Beyond that, we have a good understanding of what the components are that might fail, to know what we can replace on a game day.

Is it difficult to keep track of the various employees on game day? There's a check-in process, and we know who's supposed to be working, and those are the people who get in to work. The system was written by a couple of programmers here, so we have a custom system for the check-in, and it's up to the users — i.e., concessions, the parking folks — to enter who's coming, who's expected, and when and where they're supposed go.

Do you get tickets? From time to time, employees can purchase tickets. I find I bite my nails less if I'm going to watch the game from home, because if I'm [at the game], I'm really watching the operation and not the game. So I work some games, but I did not work the [AFC Championship Game].

Are you going to Phoenix to the Super Bowl? I have that opportunity and will probably make that decision later. From my perspective, if it's a working trip, I'd be stringing cable and I wouldn't get to see too much. So those are the things I need to factor [into my decision].

— *Interview by* **Linda Rosencrance**



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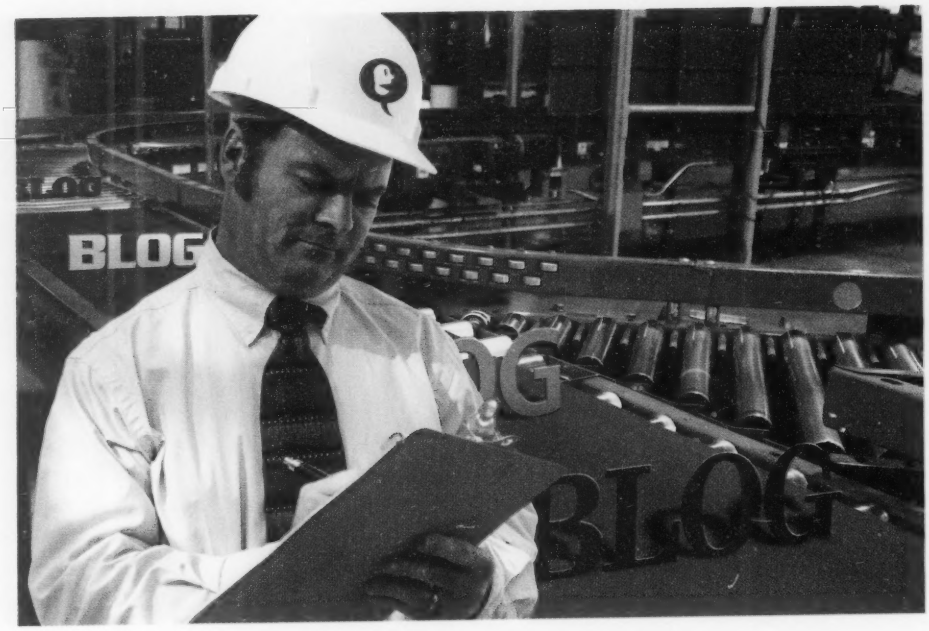

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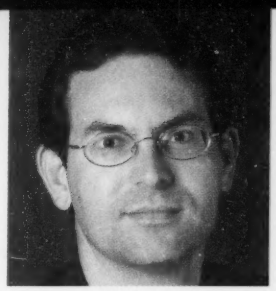
■ OPINION

John D. Halamka



Navigating Info Overload

ONE OF my greatest challenges is information overload. Every day, I'm pummeled by data: comments to my blog (*http://geekdoctor.blogspot.com*), 700 e-mails on my BlackBerry, RSS feeds, instant messaging and everything associated with my Facebook, LinkedIn, MySpace and Second Life accounts.

It's all escalating, and I've realized that I need knowledge navigators who can triage all incoming information to separate that which is important from that which is just FYI. I don't have any yet for my personal information flows, but my medical librarians have become knowledge navigators for my institutional data flows.

As CIO at Beth Israel Deaconess Medical Center, I oversee the medical libraries. These have always been clean, well-lighted places for books. But with the advent of Web 2.0 collaboration tools, blogging, content management portals, on-demand publishing and digital journals, libraries of paper books are becoming less relevant. By the time a book is printed, the knowledge it contains may be outdated. So, libraries need to become clean, well-lighted lounges for digital media staffed by expert knowledge navigators. In my institution, the librarians have thinned the book collection, migrated paper journals to digital media and indexed digital knowledge resources to support our search engine optimization efforts.

We've replaced the libraries with an information commons, and the Department of Medical Libraries has been retitled the Department of Knowledge Services. Librarians are now called information specialists. Here are a few examples of how they turn data into knowledge:

Every day, Harvard faculty members generate numerous presentations for students, residents and the medical community. Since all Harvard courseware is Web-enabled, all these presentations are placed online. But it's not enough to text-index these materials, because search engines don't match concepts. Our information specialists apply metadata tags using the National Library of Medicine's Medical Subject Heading concept hierarchy. That way, a search for "brain" will bring up a presentation about neurons, even if the word *brain* doesn't appear in the text.

■ This year, I hope to receive more wisdom and not just more data.

Another challenge with search engines is that they rank based on popularity, not on authoritativeness or value to the patient. Our librarians ensure that our Web portals' hundreds of links — to journals, books, databases and collections of medical references — are dynamically updated and refer to the most credible resources.

Our Department of Knowledge Services is also a lab for testing new Web-based and mobile knowledge resources, and we deploy those that are most relevant to our stakeholders. One recent project was to evaluate acronym-resolving tools and develop quantifiable standards for abbreviations.

Although we keep 5,000 journals online, we also have access to many predigital resources. Our Knowledge Services folks respond to requests for historical literature with desktop PDF delivery of scanned articles.

Finally, we have filled our information commons with an array of desktop computers, printers, wireless access points, scanners and staffers to assist users with the technology.

Ideally, we'll all have software agents in the future that turn data into information into knowledge into wisdom. For me, the first step has been building a Department of Knowledge Services that's staffed with knowledge navigators. Because of them, I'm optimistic that in 2008, I'll receive more wisdom and not just more data. ■

John D. Halamka *is CIO at CareGroup Healthcare System, CIO and associate dean for educational technology at Harvard Medical School, chairman of the New England Health Electronic Data Interchange Network, CIO of the Harvard Clinical Research Institute and a practicing emergency physician. You can contact him at jhalamka@caregroup.harvard.edu.*

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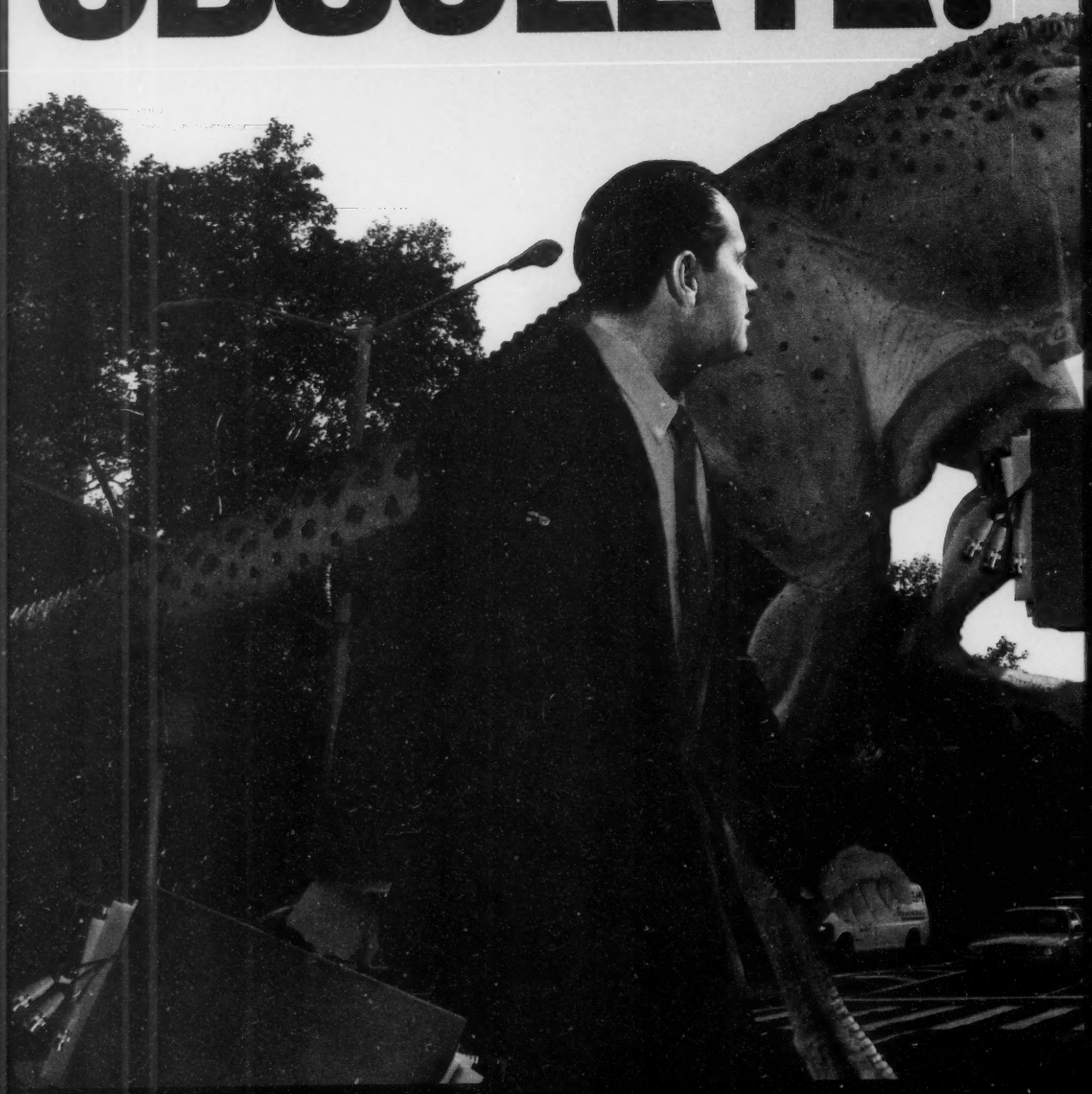

How to stay relevant in the world of Web

VINCE KELLEN has had a successful IT career. Currently CIO at DePaul University, he is also an international speaker on customer relationship management and the Internet. He has written four books on database technology and is completing a Ph.D. in computer science at DePaul.

But he's pretty proud of another recent accomplishment: achieving a skill level of 2325 in Wii tennis.

It's not all about showing off for his two kids, both under the age of 12, one of whom can handily beat him in Wii baseball or boxing. He also likes to observe how the software adjusts as the player's skill level improves, particularly when it comes to the handheld remote, which is programmed to be sensitive to physical gestures. "It's gone to the next level of interactivity," Kellen says of the Nintendo system. "The player becomes highly skillful at manipulating the interface."

This capability, he says, may not be applicable to the corporate development environment today, but it could be someday. And Kellen's curiosity about his kids' favorite video game system is a good example of the mind-set IT managers need to develop as they face what some say is one of the biggest challenges of the profession today: staying relevant as consumer-rooted and community-based Web 2.0 technologies infiltrate the corporate world at the grass-roots level and threaten to render the control-and-command style of IT management obsolete.

According to a growing chorus of IT leaders, consultants and bloggers, IT needs to shift into a new role. It should continue its traditional responsibilities, such as governance, security and control of costs and return on investment. But it should loosen control over parts of the business intent on improving productivity through the use of downloadable rich Internet applications, social networking, collaboration tools and other Web 2.0 technologies.

ILLUSTRATION BY VIKTOR KOEN

2.0, Wii and other wonders. **By Mary Brandel**

SEASONED, NOT ANTIQUATED

How do IT managers over the age of 40 stay open-minded and current with emerging trends? Here are three examples:

■ **VINCE KELLEN** has a good view into emerging technology trends because he works at a university. Many students were born around the same time as the World Wide Web, and they expect their school or work environments to mirror their personal lives, where Web capabilities are ever-present. Some observers use the term "digital natives" to describe people with this outlook, as opposed to "digital immigrants," for whom Web 2.0 technology is a second language. "The way they think about technology is different," says Kellen. "It's like water; it's just there."

But even as a digital immigrant, Kellen is more fluent than many of his contemporaries, thanks to his interaction with the natives.

■ **IAN PATTERSON** keeps up with the latest trends by using any consumer technologies he can get his hands on. "I have it all – an iPod, a BlackBerry Curve [on which] I download and test out all our podcasts; and I've spent some time on Second Life," he says.

Not that he buys into everything he tries out. After three months on Second Life, for instance, he gave up. "I think it will be there someday, but it's kludgy," he says. "The concept is there, but it's still too slow."

■ **WYNNE HAYES** has recruited her son, 14, as a mentor. "I ask him a lot of questions," she says. When she first started hearing about blogs and wikis, for example, she asked him to explain what they were. "Of course, I got the eye roll, and that's when I knew I was a dinosaur," she says.

But in reality, interaction with her young mentor will keep her evolving.

You can accomplish something similar by hiring people who push you beyond your own thought processes. One new hire at Constellation Energy constantly pushes the boundaries of what IT should be doing, says Hayes. "His director often calls him in and asks him what he thinks," she says. "He pushes us further than we'd go alone."

–MARY BRANDEL

Anthony Bradley, an analyst at Gartner Inc., foresees "a significant shift in power" that IT ignores at its own peril. With free Internet applications, Web platforms and social software, "the consumer side of the world is driving most technology advancement, not enterprise IT," he says.

There's still a question of how innovations like social networks, RSS, microblogs, wikis and mashups will translate into enterprise profits, but few doubt that they need to be explored, and not just by IT.

"Users have stormed the gates of IT," says Josh Holbrook, program manager at Yankee Group Research Inc. in Boston. "IT will catch on to corporate-sponsored blogs, wikis and social networks, but the question remains whether they will catch on in time, or will the technology they adopt will be antiquated by the time it's implemented?"

That's why IT leaders like Jeff Kuhns are discussing how to balance control with user-inspired innovation. "The companies that figure out how to do this will not only have happier, more productive employees, but the IT department will be free to focus on forward-thinking projects that could help drive revenue and innovation," the senior director of IT at Pennsylvania State University wrote on his blog recently.

AVOIDING EXTINCTION

The job of maintaining the perception of relevance — and possibly avoiding extinction — may require IT managers to take a close look at their current management styles and make some tweaks, especially if they've been working in IT for a while. "The main issue for CIOs is that they're just plumb unaware [of consumer technology developments] or pretend it's not there," Kellen says, adding that he makes a point of working and interacting with consumer electronics.

He cites Apple Inc.'s iPhone as an example. Because it's optimized for short videos, it may be useful for training or disseminating information to sales teams. Kellen's antennae are also up on text messaging, which has become a necessity for basic social interaction among college students who will soon enter the workforce. "I'm not sure what it means yet, but they're used to engaging in textual expression using a language that's not broadly accessible and through which they project their personalities," he says.

> **"You have to figure out what the organization is going to learn from this, structure that knowledge and turn it into profit.**
>
>
>
> VINCE KELLEN, CIO, DEPAUL UNIVERSITY

Kellen is still a tad tentative about the concept of Enterprise 2.0 — a term used to describe the vision of open, decentralized, community-driven technology platforms. "The Web 2.0 phenomenon is just a tiny bit more smoke than fire," he says, because no one has figured out yet the direct relationship between the unstructured data it produces and increased corporate competitiveness.

"Just having more blogs and wikis isn't the answer," Kellen says. "You have to figure out what the organization is going to learn from this, structure that knowledge and turn it into profit."

And he's trying to prepare for the day that happens. At DePaul, Kellen has formed a team focused on Web 2.0 developments, and he is pressuring vendors to make these technologies more relevant to the corporate market.

In companies where C-level executives may not welcome an IT manager moving too far away from a command-and-control style of leadership, he suggests seeking out key users to harness their passion and talents. "You can build an innovation agenda, staff it and fund it," Kellen says. "Even if it's not something that's immediately productive, in a two- or three-year time frame it will produce something."

LEAVING THE WORLD OF 'NO'

And sometimes, all users want is a sense that IT is open to the idea of, say, creating a wiki, even if IT believes a wiki will be useless until it's integrated with the CRM system to produce business intelligence. That means avoiding the perception of what Ian Patterson, CIO at Scottrade Inc., calls "Dr. No" or

Continued on page 32

_INFRASTRUCTURE LOG

_DAY 84: Feeling really disconnected. We're not getting the most out of our existing assets. Service and application integration is a nightmare. We've got to stop working on these islands.

_Please rescue me from this lack of connectivity.

_DAY 87: We're saved! With IBM WebSphere solutions we can service-enable and connect our existing assets for mission-critical goals. Now we can reuse existing applications and save money by eliminating redundant systems. We're ready for any SOA integration project.

_Plus, no more jellyfish stings.

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Continued from page 30
the "Abominable No Man." "The guy wanting to update the wiki doesn't care about your grand scheme," he says.

One way to provide immediate satisfaction while also performing the due diligence of ROI and risk assessment, he says, is to break grand schemes into smaller parts and let users know what they can expect. For instance, IT might promise to deliver a user-requested wiki within a week while planning to create a business intelligence reporting mechanism two or three months later, knowing that the user would chafe at waiting that long for his initial request to be met. "Start looking at things in 30-day increments, not six-month increments," Patterson says. "There are always projects that are 90-, 180-, 360-day projects, but how do you handle those things that should be done in a week?"

Shorter-term projects may not need the controls and processes that longer-term projects do, for instance. By seeing things less in a "one size fits all" way, Patterson says, IT becomes a collaborator rather than an inhibitor.

Take the word "no" out of your vocabulary, Patterson says, and start thinking in terms of "That's a possible idea; let's see what we can do with it."

After all, if users perceive IT as a roadblock, they'll just find other ways to accomplish what they want, and Holbrook says they can succeed. He has seen entire sales teams turn to consumer technology to make them more productive, only to have IT shut down the applications because they weren't sanctioned. In one case, he says, the CFO overturned IT's decision because it was seen as inhibiting revenue generation.

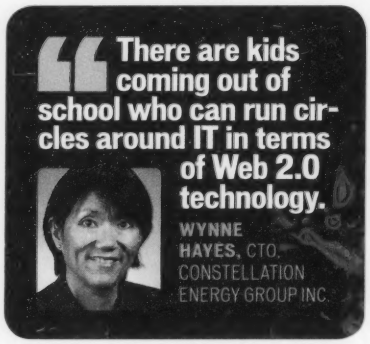
DON'T GIVE UP

At Constellation Energy Group Inc., the attitude in the CIO's office is not "We can't do it" but "This is interesting; is there applicability?" says Wynne Hayes, chief technology officer at the Baltimore-based company.

This kind of open attitude can make increasing your business savvy as important as improving your Web 2.0 fluency. "There are kids coming out of school who can run circles around IT in terms of Web 2.0 technology," Hayes says. "That makes it important to become more business-oriented so that we don't become hindrances to getting business done."

The open attitude has already led Constellation to try out a novel approach to systems development. When the commodities group recently needed a new application developed quickly, it turned to Glastonbury, Conn.-based TopCoder Inc., which stages regular coding competitions, ranks developers who compete and then makes this talent available to businesses that need systems built.

The work is broken down into dozens of pieces so that developers work in parallel with one another. When coding is complete, the components are integrated. This speeds the job, which has "tremendous value" for the commodities business group, Hayes says.


"There are kids coming out of school who can run circles around IT in terms of Web 2.0 technology.
WYNNE HAYES, CTO, CONSTELLATION ENERGY GROUP INC.

Despite such results, few advocate opening the floodgates to a huge change for IT and the business. The world of Web 2.0 is messier than any corporation is accustomed to. For instance, traditionally, any information that was published — whether internally or externally — was checked and cross-checked and subject to a corporate approval process. With Web 2.0, that type of governance is completely irrelevant, if not destructive to the very purpose of the blog or wiki, Hayes says. "The last thing we want to do is put governance around it," she says. "It's incumbent on the individual to take responsibility."

So it's not just a question of whether IT is ready. It's also a matter of communicating to other business leaders the changes these technologies imply, ensuring that they're prepared for the autonomy the technology requires, and planning a phased implementation. Constellation is piloting wikis and blogs in its commodities group and exploring their applicability for engineers and IT.

"We want to make sure the culture is ready for the shift — that they're responsible for content," Hayes says. And that also means readers must be responsible for critically analyzing the information they read.

Patterson agrees that collaborative publishing and social networking tools should not be overly managed by IT. Scottrade uses Web-scanning technology from RSA Security Inc. to ensure the accuracy of what gets published on the public Internet, but those processes are handled by business people, not IT.

ACHIEVING BALANCE

Employees increasingly expect that the technologies they use in their personal lives will follow them everywhere they go — and that they won't need any help implementing them. Given such expectations, IT professionals are struggling to redefine their roles.

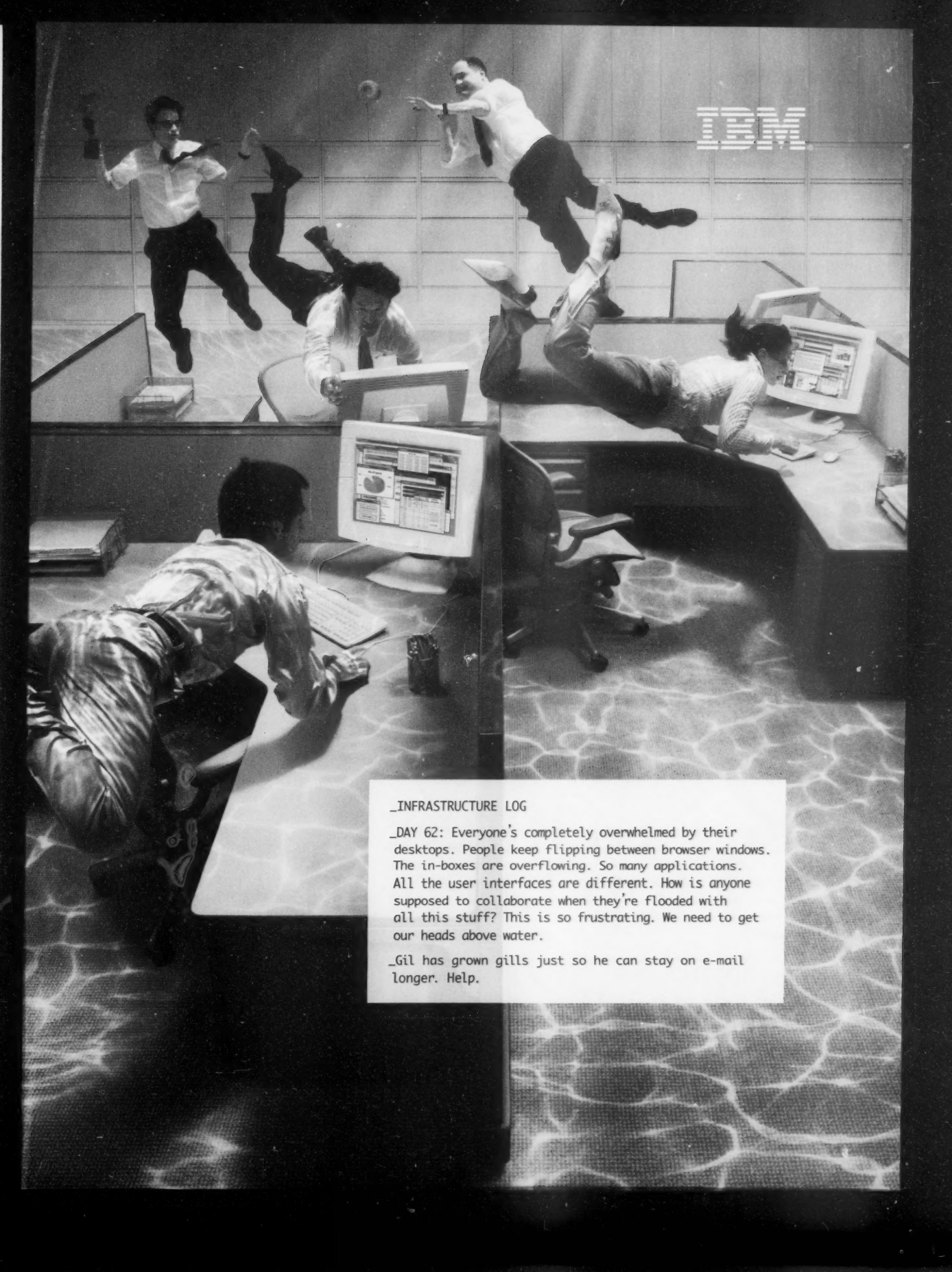
They tend toward three approaches, Holbrook says: seek and destroy (shutting down unapproved applications), acknowledge and ignore (doing nothing to manage the situation), or solicit and support (trying to support all the technologies brought in by users). He suggests a fourth way: enabling the creation of online communities for users to share best practices for managing consumer technology in the workplace.

"IT can be involved in these communities and help shape opinion about which tools are best and how they can be optimally deployed, but it only intervenes when an application poses an unacceptable security risk," Holbrook says.

This enables users to bring in consumer technology but mitigates support headaches. "This is a big change for IT," he says, "because it's a move to a communal method of managing end users."

Another big part of the balancing act is user education, Patterson says. "It's about having an open dialogue with the business [people] so they understand what it's going to cause from a compliance or e-discovery or risk perspective," he says. "There's a fine line between being considered a dinosaur and being considered an enabler." ■

Brandel *is a* Computerworld *contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.*



_INFRASTRUCTURE LOG

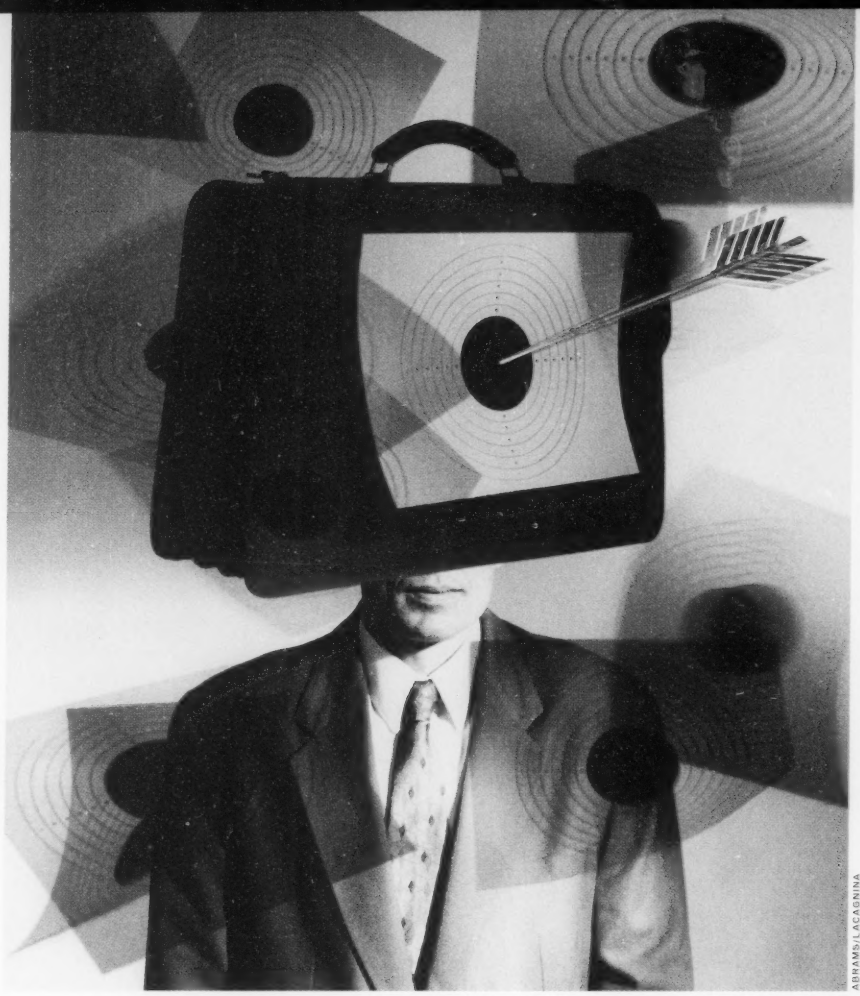
_DAY 62: Everyone's completely overwhelmed by their desktops. People keep flipping between browser windows. The in-boxes are overflowing. So many applications. All the user interfaces are different. How is anyone supposed to collaborate when they're flooded with all this stuff? This is so frustrating. We need to get our heads above water.

_Gil has grown gills just so he can stay on e-mail longer. Help.

THE RECENT uptick in skirmishes over IT talent may indicate that a full-scale war is heating up for '08. If so, the weapons this time will be different from those used in the last big dustups of the dot-com era.

"We are seeing a war for talent, and it's been building up for the past three years," says Dan Reynolds, CEO of IT staffing firm The Brokers Group LLC in Princeton, N.J. The demand for IT talent is being driven by new project investments, a dramatic reduction in the number of IT grads from U.S. colleges, and the first wave of baby boomer retirements, he says.

Whatever the reasons, employment experts note that savvy CIOs, recruiters, headhunters and other hiring managers are finding new ways to snag the best candidates, in addition to updating old techniques. Here are eight ways to target IT talent in the coming year.



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8 New Ways To Target Top Talent in '08

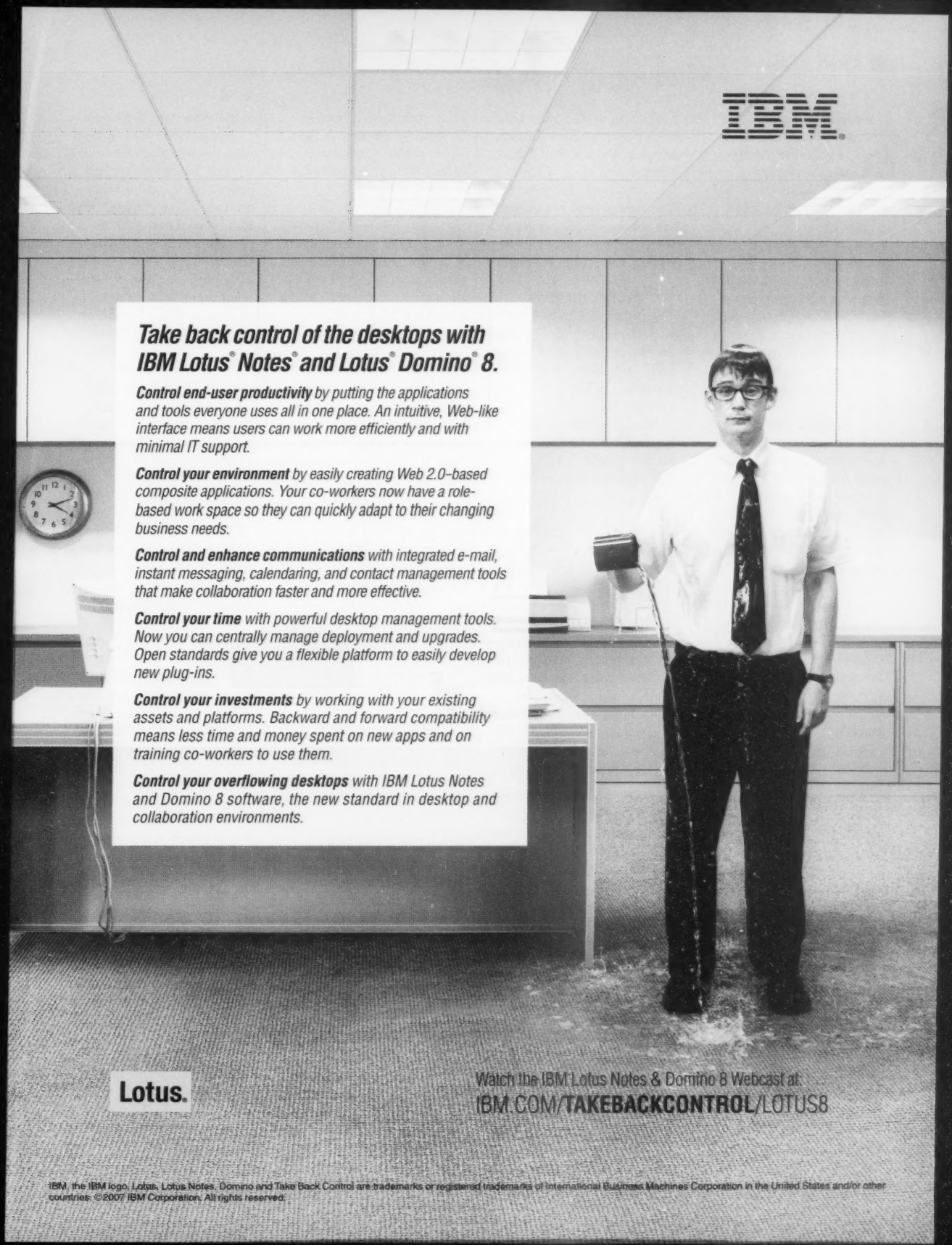
Old approaches won't snag new IT recruits. Try these.

By Thomas Hoffman

1 SOCIAL NETWORKS. Although hiring managers continue to use job sites such as Monster.com to advertise positions, social networking sites such as LinkedIn are providing "a better-quality pool of applicants," says William Gomes, director of human resources at Intermedia Inc., an e-mail Web hosting company in New York. By using social networks, Intermedia is "getting a better ratio of qualified applicants" than it did from the throngs of job seekers posting résumés to job sites, says Gomes.

2 WIKIS, BLOGS AND FORUMS. Companies are increasingly turning

Continued on page 36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Continued on page 34
to online communication tools to generate discussions with prospective hires. The tools also help to "harmonize" values between employers and would-be employees, says JP Rangaswami, a managing director at BT Group PLC in London. Because BT Group has at least 70 known bloggers, IT workers "come to us because they've heard of us more and they know what we're doing," he says.

3 BUSINESS VALUE. "The tenor of the job announcement has changed," says Robert Rosen, past president of IBM user group Share and CIO at the National Institute of Arthritis and Musculoskeletal and Skin Diseases in Bethesda, Md. "There's much less emphasis on technical skills" and more on business value, he says.

Of course, IT hiring managers remain hungry for people with strong technical abilities and hot skills. But it's even tougher to find IT professionals with business savvy or experience managing relationships with business units, says Craig Urrizola, CIO at Saladino's Inc., a Fresno, Calif.-based food distributor.

4 TRYING BEFORE BUYING. Instead of posting job ads in newspapers or through online job services, employers are increasingly turning to other techniques, such as right-to-hire agreements. In these approaches, an employer hires a professional contracting firm to do the recruiting for it. The employer agrees to hire qualified candidates for a few months with the option of offering them full-time employment later.

"I've done this a few times with programmer/analysts," says Joe Trentacosta, CIO at Southern Maryland Electric Cooperative in Hughesville. The lure of health care and other benefits for permanent workers plays a key role in tipping the scales, he says.

5 GLOBAL THINKING. "Those who believe the search for [IT] talent is limited to the U.S. are badly mistaken," says Bob Worrall, CIO at Sun Microsystems Inc.

Smart businesses think beyond borders. For example, roughly half of Intermedia's 170-plus IT pros work in its offices in St. Petersburg, Russia, says Gomes. The company draws others from India and other non-U.S. locations.

6 THE ANYWHERE WORKPLACE. The concept of going to the office certainly hasn't disappeared, but how and where IT work gets done is changing. "It used to be that you 'went' to work every day, coded away and then went home," says Worrall. Today's twenty-somethings are demanding "to connect to work from a laptop on a train or at the beach," he says. And employers are more apt to accommodate them — to a degree.

"We provide [IT] staff with flexible work hours and laptops, BlackBerries and other devices to help them do their jobs remotely," says M. Lewis Temares, vice president and CIO at the University of Miami in Coral Gables, Fla. "But we still need them to be on campus at various times to support the university's services."

7 PUMPED-UP PAYCHECKS. Part of the whole supply-and-demand continuum, this is an old tool that's back. With fewer qualified IT professionals available, particularly in hot markets, companies are offering bigger salaries. At Intermedia, offers to new employees in the San Francisco Bay Area are 20% higher than they were a year ago, says Gomes.

8 IMAGINATION. Compensation continues to be the biggest factor in the recruitment and retention of IT professionals, but perks such as telecommuting, flexible hours and opportunities to work for socially conscious organizations are important to many IT workers. And sometimes it just takes creativity to snag and keep top talent.

For instance, IT professionals who work at the National Aquarium in Baltimore typically earn 15% to 30% less than peers who work elsewhere in the city, says Chief Technology Officer Hans Keller. But he offsets that with other perks, such as a recent research trip down the Amazon River.

Closer to home, he says, "I have two people on my staff who dive into the tanks and feed stingrays. That's not a typical assignment for a systems developer." ■

Tried-and-True Techniques

New tools such as social networks are changing the face of talent management for IT executives. But some time-tested techniques for retaining or recruiting IT professionals continue to work well, according to IT labor experts.

"Stay" and signing bonuses. Signing bonuses never completely fell out of vogue, but they've experienced a resurgence over the past two years as certain types of IT skills have become more scarce. And as CIOs pay more for new talent, they'll have to consider offering "stay" bonuses or risk losing valued IT workers.

Feeder programs with universities. Many smart CIOs establish and maintain solid relationships with a handful of local or respected universities to create a talent pipeline and to instruct academic officials on the types of skills they need.

Commitment to training. Most IT professionals are hungry for new training opportunities, and they look for employers who are dedicated to providing IT staffers with a variety of educational options, including technical training and tuition reimbursement.

Face-to-face networking. Social networking sites such as LinkedIn and Facebook are great for identifying prospective employees. But nothing beats attending industry events and hobnobbing with peers to identify new sources of talent.

Internal development. IT organizations that are consistently committed to developing staffers in good and bad economic times develop strong reputations and draw the best and brightest.

–THOMAS HOFFMAN

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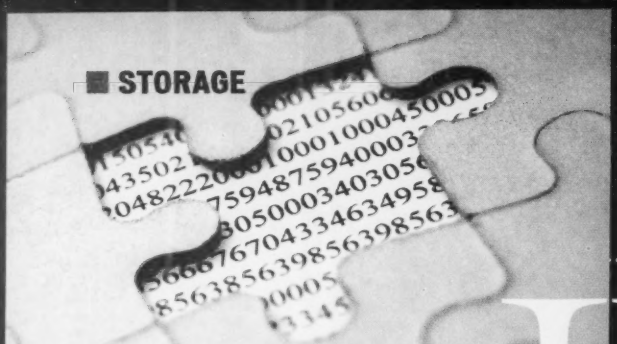

An IRS Data Breach

Could it happen? And how much would it hurt?

By Dian Schaffhauser

COULD THE LOSS OF DATA from the Internal Revenue Service's huge master files cause a financial meltdown in this country? That's what some experts are pondering as the U.K. mops up the mess caused by the disappearance late last year of two password-protected CDs containing the country's entire database of child benefit recipients — 25 million people. The breach, which occurred when a third-party delivery company lost the discs, affected four out of 10 people in the U.K., the largest percentage of a country's population involved in a privacy violation ever publicly disclosed.

A loss of that scale could have already taken place within the IRS, "and we don't know about it," says Avivah Litan, a Gartner Inc. analyst and longtime World Bank Group executive. Over the past several years, potentially hundreds of laptops containing sensitive information have disappeared at the IRS, according to an audit report last year by the Treasury Inspector General for Tax Administration.

Like the U.K.'s HM Revenue & Customs office, the IRS maintains not just names, addresses, Social Security numbers and other personal information of individuals, but also banking details for the direct deposit of tax refunds. Of the 128 million tax returns filed in the 2007 filing season, 46% requested direct-deposit refunds. Likewise, the bulk of the $2 trillion processed by the agency in a year is collected via automated banking. That translates into a lot of personal and banking details maintained by the IRS.

In the area of data protection, Litan says that overall, the government has been the "most behind as a sector." In fact, she points out, most agencies are late in submitting project plans for how they'll protect personally identifiable information, as mandated by a 2007 memorandum issued by the Office of Management and Budget.

IRS ACTIONS

Although IRS executives and sources that consult directly with the IRS declined interview requests, some details of the agency's security and privacy initiatives can be gleaned from public sources.

In a congressional hearing on June 8, 2006, Daniel Galik, most recently the IRS's chief of Mission Assurance and Security Services, shared details

of his agency's efforts to secure data. Here's some of what he said:

■ There is no evidence that any IRS system has ever been compromised by external attacks.

■ Of the agency's 94,000 full- and part-time employees, more than half are mobile and authorized to have taxpayer and sensitive information at locations outside of IRS office space.

■ All IRS computers are equipped with encryption tools, providing the capability for at least double encryption and double password protection, as well as the ability to encrypt all sensitive e-mails.

■ The IRS has 100 firewalls and several intrusion-detection devices on its computer systems.

That's fine, up to a point, says security consultant Kevin Beaver. "If it's implemented correctly, I think encryption is probably more than enough," he says. But operating system configurations can lead to security holes, as can users — through error or by design. All it takes is a user leaving a laptop alone without locking the screen — or configuring it to never lock down, no matter how much time has passed.

"There's no encryption that will prevent someone from accessing [an unprotected] system," Beaver says. And if the encryption technologies are tied to user log-ins, "they're only as secure as the user's password."

According to an IRS spokeswoman, all of the agency's 50,000-plus laptops have automatic encryption software installed. Employees who work on desktops also have encryption tools, she says, but the process of encoding data isn't yet automated.

Galik also told Congress that a major concern was the use of portable storage devices, such as thumb drives. He said he had sent a memo to all employees informing them that if they use the devices to hold sensitive data, they must encrypt those files with IRS-approved encryption software.

The IRS spokeswoman says that this year, the IRS will be upgrading its systems to ensure that all data saved to portable media devices will be encrypted. Likewise, she says, all mainframe data shipped to IRS partners undergoes encryption.

What are the chances of a financial catastrophe in the wake of an IRS data breach? "I think an asteroid striking the Earth is a greater probability than a recession happening through somebody draining everybody's bank accounts [after a breach]," says Oliver Ireland, former counsel at the Federal Reserve System and an attorney specializing in retail financial services at Morrison & Foerster LLP. In the vast majority of cases where information is lost, he says, "it's really lost."

He remembers a case in which a client's data tape was lost while the organization was moving offices. The moving company subsequently reported that its trucks were cleaned at the end of the night and that anything found in them was thrown away. "The chances of somebody digging through a dumpster, finding a tape and finding a way to read that tape is probably pretty close to zero," Ireland says.

But Denise Chatam, author of the upcoming book *Cybercrime: Secure IT or Lose IT* and dean of technology at Cy-Fair College in Cypress, Texas, says the odds of malfeasance are higher than that. If a lost data tape landed in the hands of someone with malicious intent, "I could go get a programmer, pay him $25 or $30 an hour, and he could translate that data into something that's usable for me," she says. "Now I could take that same information and sell it on the black market."

But Ireland doesn't believe a massive data loss could ever truly create havoc with the banking system in this country. "People have been looking at financial fraud literally as long as there's been finance," he says. "I would worry about it in large-dollar funds transfers — not in consumer transactions."

But, Ireland points out, the systems that handle corporate wire transfers are also highly secure and have sophisticated control and antifraud techniques.

Gartner's Litan is skeptical that a data loss could result in a large-scale run on bank accounts. "I don't think there could be a run on banking systems," she says, "because if there was, [banks would] just stop all transfers."

A more likely scenario, according to Litan: A terrorist could publish millions of bank account numbers on the Internet, "just to terrorize the banking system," she says. That would be hugely disruptive, she adds.

Tools, regulations and nightmare scenarios aside, some things never change. Even the tightest security controls in the world are susceptible to the weakest link — the person with access to the data. Galik told Congress that the biggest challenges are getting people to use encryption tools and follow existing security and privacy policies and processes.

And that goes double for data on the move. "It's hard enough controlling sensitive data in your own environment," says Beaver. "Once you turn it over to a third party [such as a delivery service], it's anyone's game." ■

Schaffhauser *covers technology and business for a number of print and online publications. Contact her at dian@dischaffhauser.com.*

Personal Precautions

YOU MAY NOT have too much control over the security measures implemented by the IRS, but Gartner analyst and World Bank executive Avivah Litan suggests basic precautions to prevent private information from being used without your knowledge – measures she follows herself.

■ **Never give your bank account number online.** Litan says she also never shops with a bank account number.

■ **Transfer money only between accounts that you've set up.** Litan never uses a bank that lets her transfer money out of her accounts to another system.

■ **Don't use online bank payment.** "A crook could go in and set up a new payee," says Litan. "So I'm very restrictive about where money goes from my bank account."

■ **Monitor your accounts closely by studying the transactions.** She recommends doing so at least monthly, if not more often.

■ **Use your credit card.** It's easier to get your money back with a credit card than with anything else, Litan says.

– Dian Schaffhauser

A Wimpy Worm Tests Response

The worm **is poorly designed,** but it nonetheless shows the **effectiveness** of the **incident-response** process.

Trouble Ticket

ISSUE: A variant on an older worm brings in a flood of help desk calls.

ACTION PLAN: See how well the incident-response process holds up in the real world.

NOTHING keeps you on your toes the day before a holiday break like the need to respond to a virus outbreak.

The virus showed up on Friday, Dec. 21, the last day of work before a company-wide, two-week shutdown that had been mandated to save money. The virus outbreak ruined our track record of eight months without an incident. That was disappointing, but deep down, I look forward to these sorts of events because they give us a chance to test our incident-response protocols in real-world situations.

As these things go, this end-of-the-year outbreak was rather mild. It all started with a jump in help desk support calls, with users reporting that they had received a pop-up message from their Trend Micro OfficeScan clients stating that a worm had been identified that couldn't be cleaned.

When more than 10 calls are received within an hour, we classify the event as Priority 1. That means we activate the emergency telephone bridge and notify all of the on-call IT personnel around the world. The CIO and his direct reports receive an e-mail notification and are kept abreast of the situation until it is resolved.

Once I learned that we had a Priority 1 situation, I headed for the war room, a conference room with videoconferencing equipment, plenty of Ethernet ports and a well-stocked refrigerator for long nights. I was pleased to see that the incident-response protocol I had implemented a couple of years ago was being followed.

A security engineer had obtained an infected laptop and was analyzing the suspicious file. He said it was called winllogo.exe, which sounded familiar to me. The virus outbreak that hit us eight months ago involved a fast-propagating worm that Trend Micro called WORM_PRSKEY.A. It dropped copies of itself into users' start-up folders as a file called winllogo.exe. Armed with that information, the security engineers took a closer look and determined that, sure enough, this was a variant of that worm.

■ Once I heard that we had a Priority 1 situation, I headed for the war room, where I was pleased to see that the incident-response protocol was being followed.

TAKING A LOOK

The engineers used various techniques to analyze the suspicious code. First, they installed and ran Wireshark, which is a network protocol analyzer, or sniffer, that runs on Windows. This let them see that the laptop was attempting to connect to a public Internet site, the same one that the PRSKEY worm had connected to in order to transmit keystroke captures. Fortunately, the Web site in question was no longer in service.

Then, using several tools, including very useful ones from Microsoft's Sysinternals site, they found that this worm was different from PRSKEY only in the way it propagated the infected file through the network. Like PRSKEY, this variant attempted to install a keystroke-capture program, but it wasn't written properly and failed to execute.

In line with our support agreement with Trend Micro, we sent it a copy of the infected file, and the company provided us with the appropriate updates to clean our systems. It took almost six hours for Trend Micro to get us the updates, so we had to send a message to all of our users letting them know about this new worm. That e-mail cut down on calls to the help desk.

The incident can be summed up as more of a nuisance than a threat. Still, the way it was handled provided validation that our incident-response process is effective in quickly detecting and analyzing malicious code in our environment. ■

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

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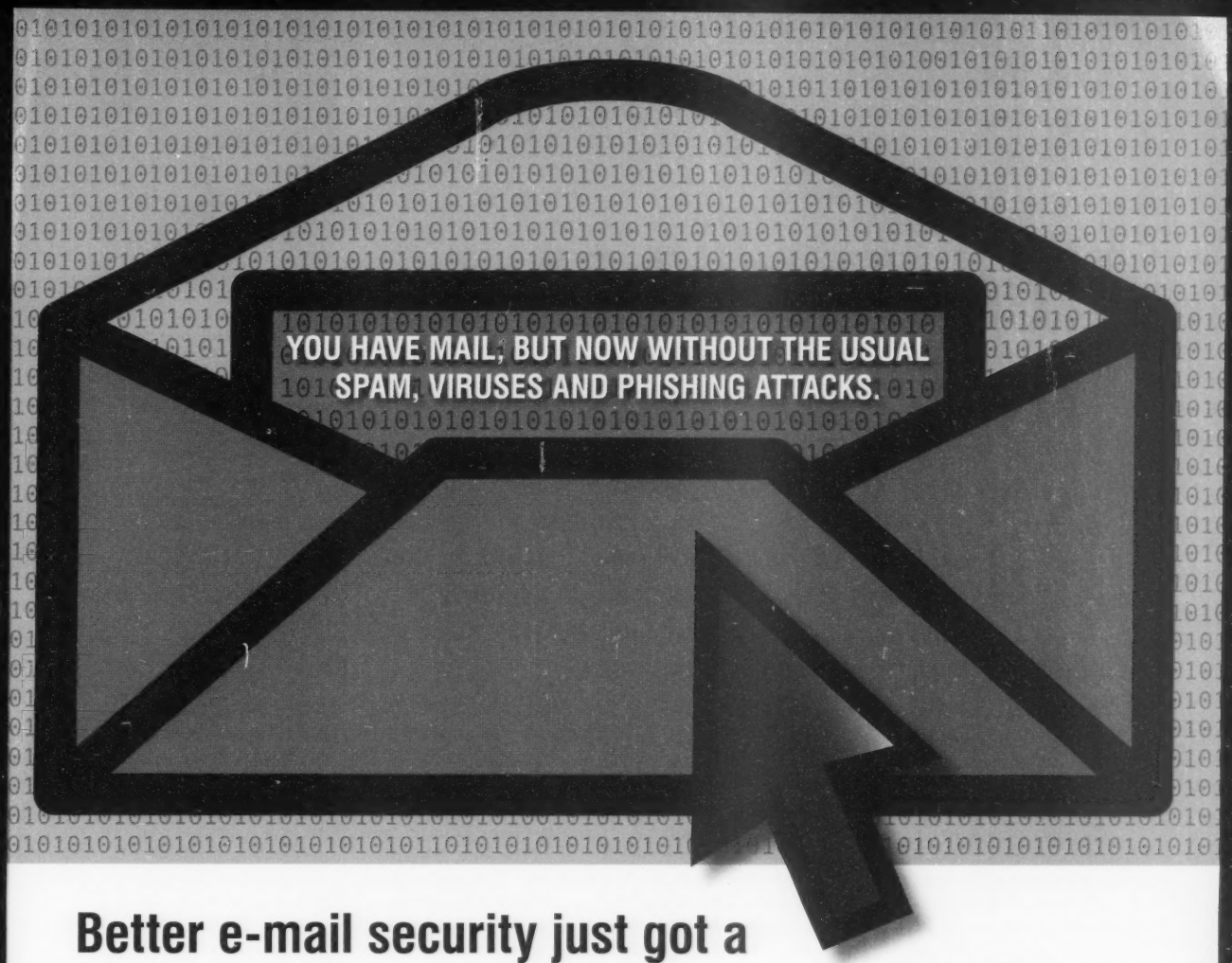

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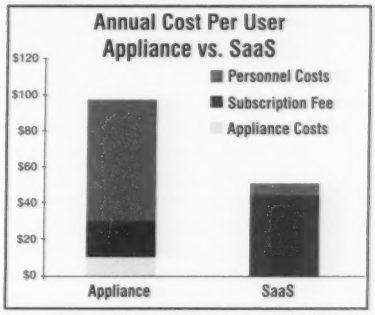

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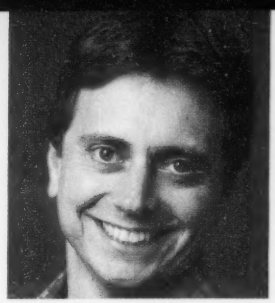

Keeping a Lid On Broadband

DEREGULATION of telecommunications has been nothing less than an unmitigated disaster for U.S. businesses. If the broadband mess isn't hurting your business today, it soon will be. It's time to do something about it.

The Internet binds businesses to customers, suppliers and partners in a set of federated networks, and the concept of the virtual office has extended the corporate network, delivering bandwidth-hungry services into many employees' homes.

Truly high-speed Internet services of 100Mbit/sec. to 1Gbit/sec. are opening up new business opportunities that could create the next Google.

But not in the U.S. Here, the Internet is being throttled at its endpoints by telecommunications carriers and cable companies with a record of spotty service quality, a broadband rollout that has left more than half the nation behind, and overpriced, overprovisioned "high-speed" broadband services that are still widely unavailable.

In five years, multimedia business interactions will be commonplace. Global, high-definition videoconferencing over the Internet isn't far off. Problem is, an HD video stream requires a sustained 2Mbit/sec. end to end, but today as many as 30 customers in a given area in the U.S. may share 30Mbit/sec. of broadband capacity. What's more, one cable company is monitoring Internet traffic and throttling back or stopping some audio and video streams that compete with its core business.

Will you get the bandwidth you need? If your business is in Europe or Asia, the answer is yes. The average advertised bandwidth in Japan is just under 1Gbit/sec. In Korea and France, it's over 40Mbit/sec. That sort of capacity will drive innovations that U.S. businesses can't even envision yet.

But in the U.S., except in a few metro areas, most people are lucky if they can get 6Mbit/sec. — and in rural areas, most users can't even get that.

■ The state of broadband is a disgrace born of political failure.

It's a disgrace born of political failure. In 1996, the government agreed to free the Baby Bells to compete in the long-distance market if they met certain conditions. Among other things, the Bells promised to share their facilities with other providers and pledged to run fiber to every home. "Almost every one of them reneged on their promises," says David Passmore, an analyst at Burton Group.

Ironically, the rate relief the carriers were given over the years in return for their empty promises — by some estimates as high as $70 billion — would have gone a long way toward running fiber to every home in the U.S.

"The politicians gave away the store, and all of the networks that were paid for by the rate [payers] were handed over to the Verizons of the world," says Passmore.

Businesses should pressure the telecommunications/cable duopoly and regulators to make a competitively priced, nationwide, guaranteed 100Mbit/sec. broadband infrastructure a priority — and 1Gbit/sec. the goal.

Furthermore, all ISPs should be required to contribute to the Universal Service Fund just as land-line carriers do. Unless those subsidies are replenished, high-speed Internet access will never be fully extended to the 20% of businesses and homes in rural areas left behind by the market.

Business also has a stake in promoting Net neutrality. You — not the telecommunications or cable TV companies — should control your content.

Finally, businesses should demand that the FCC require the winning bidders in this month's auction for 700-MHz spectrum (which television broadcasters will abandon in 2009) provide open access. A clear separation of the basic Internet access infrastructure from the services that ride upon it is the only way to prevent today's carriers and cable companies from continuing to act as gatekeepers to the Internet — and stifling innovation in an Internet economy that will be critical to U.S. business growth in the future. ■

Robert L. Mitchell *is a* Computerworld *national correspondent. Contact him at robert_mitchell@computerworld.com.*

Career Watch

92%

The likelihood that technical managers and professionals would receive hiring bonuses in the past year, within companies offering such bonuses. The two categories next most likely, at 80% each, were operations managers and professionals, and sales managers and reps.

$5,000 to $9,999

The amount of hiring bonuses most likely to be paid to technical managers and professionals.

Base: July 2007, Culpepper Pay Trends Survey of 279 companies

SOURCE: CULPEPPER EBULLETIN. AUGUST 2007; COMPLIMENTARY SUBSCRIPTIONS AT: WWW.CULPEPPER.COM/EBULLETIN

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Industry Association As Career Booster

Maintaining a membership in an IT industry association can be an effective way to wind up on the short lists for the best jobs, say several people interviewed for a CareerJournal.com article on the topic. And being actively involved in such associations is an even better way to plant yourself squarely in the sights of recruiters. According to the Aug. 14 article by Sarah E. Needleman, recruiters trying to fill jobs often take a gander at the rosters of relevant industry associations and then make cold calls.

But several recruiters Needleman quoted said it usually isn't that simple, and the relationships built up over years of association involvement are what make the difference. For example, John Cronin, a managing director at Capital Finance Recruiters Inc. in Leonia, N.J., said he recently placed a candidate he had met at an association meeting 10 years earlier into an IT audit position at a large health care firm. "We always kept in touch, and finally it worked out," Cronin said.

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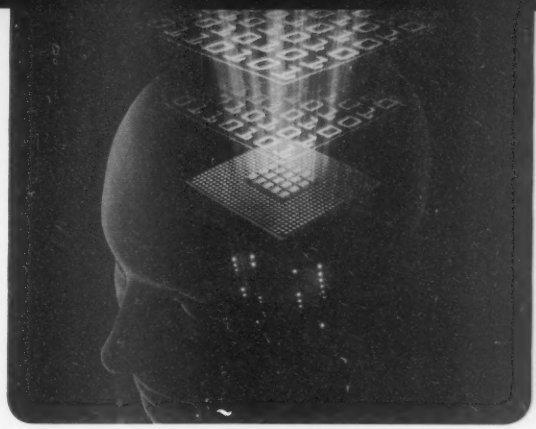

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IT Leaders And Mind-set

To succeed as the former, you may need a change in the latter.

BY GWEN WALSH

Expectations for IT have changed dramatically. Not only is IT called upon to support technology needs, but it's also expected to sustain strong client partnerships, demonstrate business acuity, execute successful projects and deliver exceptional results.

For an IT leader to manage all this, it's important to first understand the leader's role: to influence and inspire people to get the right work done at the right time to achieve the right results. Any leader who's not doing this must undergo personal change, particularly when it comes to familiar, comfortable mind-sets. Here are five behavioral changes IT leaders must consider:

1 Think of the big picture. Plan exactly how you're going to increase the bottom line, deliver exceptional customer service and optimize IT investments. Communicate your plan until everyone understands your expectations and their roles. Execute, track progress, and review results to ensure that you and your staff are delivering quantifiable value.

2 Adopt a proactive approach. True leaders create the future, which means taking preemptive action to fulfill client needs and solve their problems before getting buried in chronic problems, client complaints and dissatisfaction with IT results.

3 Resist the temptation to delve into tactics. You must clear your slate to make time for leadership work. Document the most important areas that require your attention, as well as how you're actually spending your time. Categorize each activity as "stop," "start," "continue" or "delegate." Use this analysis to create and execute your personal change plan.

4 Be candid with yourself and others. Before you can help others, you must admit to your own weaknesses. If you're lacking key leadership attributes and behaviors, find a trusted adviser to help you reinvent yourself. Next, objectively identify your team's weaknesses and help team members create and execute their personal change plans. It's your responsibility to help them become the very best they can be.

5 Prepare for and embrace change. Leaders need to recognize change, encourage and celebrate the benefits of change, and plan for the realities of change to ensure the most seamless, fearless and successful transition possible. ■

Walsh, *a former CIO and now a senior consultant at Ouellette & Associates Consulting Inc. in Bedford, N.H., is co-author of the book* The IT Professional of the Future, *due out this year.*

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But Not Like That

This defense agency pilot fish's team is tasked with securing an out-of-the-box laptop so soldiers can use it for a particular application. "We secured the system, making sure it complied with DoD regulations, DISA and everything else we could think of," says fish. But at a meeting, the app's developers object: "We don't want any passwords on the computers. It would be too inconvenient for the soldiers." Says fish, "We told them the computers would have to have passwords. And we all looked at each other and wondered why we had gone to all the trouble of securing the systems if they weren't intended to have passwords."

@#$%!.com

This company has just implemented Web filtering and, as usual, HR locks it down tight. And, as usual, it's IT that catches the flak from users – some of it justified. But among the requests to open blocked Web sites is one from a user who wants access to a domain name that contains a reference to, um, certain large parts of the female anatomy. "His reasoning was that there were surveys and research on there to which he needed access," sighs an IT pilot fish in the loop. "We dutifully sent it on to the head of HR and the CIO for their approval. He didn't get it, and I believe he left not long after. Coincidence?"

Do as We Say, Not as We Do

Green-screen terminals give way to PCs at this company, and despite published policies about installing only authorized software, users are downloading unauthorized screensavers, mouse pointers and wallpaper like crazy. "Admin rights to install software are revoked on all PCs except those of IT personnel, who must have it for testing," reports a pilot fish who's dealing with the problems. "Then the IT quality assurance administrator opens a service ticket to the desktop group: She's having difficulty downloading a cute screensaver from the Disney Web site. Perhaps she hasn't fully understood her job title?"

Don't Do That!

It's the mid-1980s, and this programmer pilot fish with a minor problem calls a systems analyst over to his desk for help. "At the time, my dumb-terminal keyboard was one with PF keys across the top," says fish. "I had reset the PF keys to do what I wanted them to do. When the systems analyst came over and started punching the PF keys, he became upset and refused to help me. He stated that IBM had set the PF keys to do certain things and I should not have changed them, then he walked away. Well, if IBM didn't want the keys changed, IBM shouldn't have given me a way to change them."

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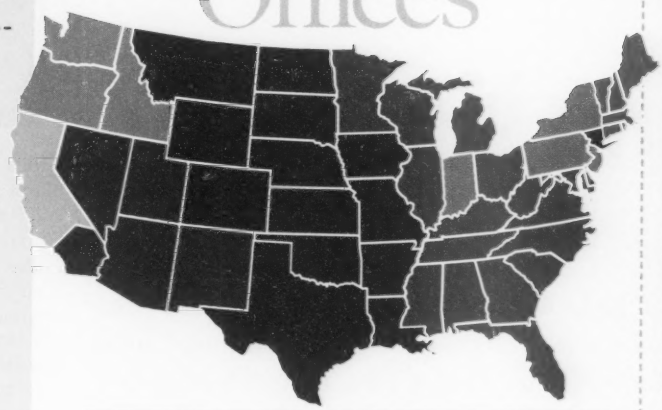

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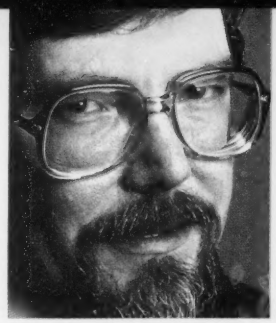
Frank Hayes

Loafing No More?



SAM ZELL just told the 20,000 employees at his company that he trusts them on the Internet during work time. "I have instructed that all content filters be removed," he told Tribune Co. workers in a memo last week. "You are now exposed to the dangers of YouTube and Facebook. Please use your best judgment. Let's focus on what is important, and go for greatness."

Is this guy crazy — or is he onto something?

Understand, this isn't what we usually think of as an IT decision. Sam Zell isn't a CIO. He's not in charge of cybersecurity for his company. It's not even clear whether Tribune's IT people were consulted.

Zell is the Chicago real estate billionaire who took Tribune private last year. Now he's the chairman, CEO and biggest shareholder of the company that owns the *Chicago Tribune*, the *Los Angeles Times* and other newspapers, along with dozens of TV stations and the Chicago Cubs.

In other words, he's Tribune's big boss. So when he decides that Internet content filtering will go, it goes.

What's more interesting is *why* Zell thinks this is a good idea. Doesn't he understand that unrestricted Web access will demolish productivity, clog networks, amp up legal liability issues and blow holes in security? (It must be true — after all, every Web-filtering product vendor says so.)

Tribune won't comment on Zell's memo except to confirm that it's authentic. But we know Zell has a law degree, so it's safe to assume that he understands liability. Bandwidth and security issues aren't his forte, but he appears to trust that his IT people are competent to manage the networks.

And productivity? Zell seems to think his employees are grown-up enough to get their work done, even with YouTube just a click away.

■ Doesn't he understand that unrestricted Web access will demolish productivity, clog networks, amp up legal liability issues and blow holes in security?

Or maybe he figures that in the age of the iPhone, employees don't need a company computer to kill time on the Internet. Heck, he probably understands that wasting time at work doesn't require any advanced technology at all.

And there's no technology that can force a worker to be productive.

This isn't the way we're accustomed to thinking, is it?

Keep in mind that Zell has ordered IT to pull the plug only on Internet content filters, not bandwidth management, logging or malware screens. If networks bog down, IT will be able to track down who's causing problems. If users are visiting problem sites — whether they're serving up malware, porn or anything else that's a bad idea — that'll show up and can be dealt with.

But the central idea behind content filters, the idea we've bought into and have always sold upstream to management, is that cyberloafing is a costly problem and that by taking away the cyber, we can stop employees from loafing.

Zell's idea is that we've been wasting our time. If cyberloafers get their work done, a little loafing is irrelevant. And if they don't, they should be penalized for not getting their work done, not for what they do online. That's a problem for their managers to address, not something for IT to worry about.

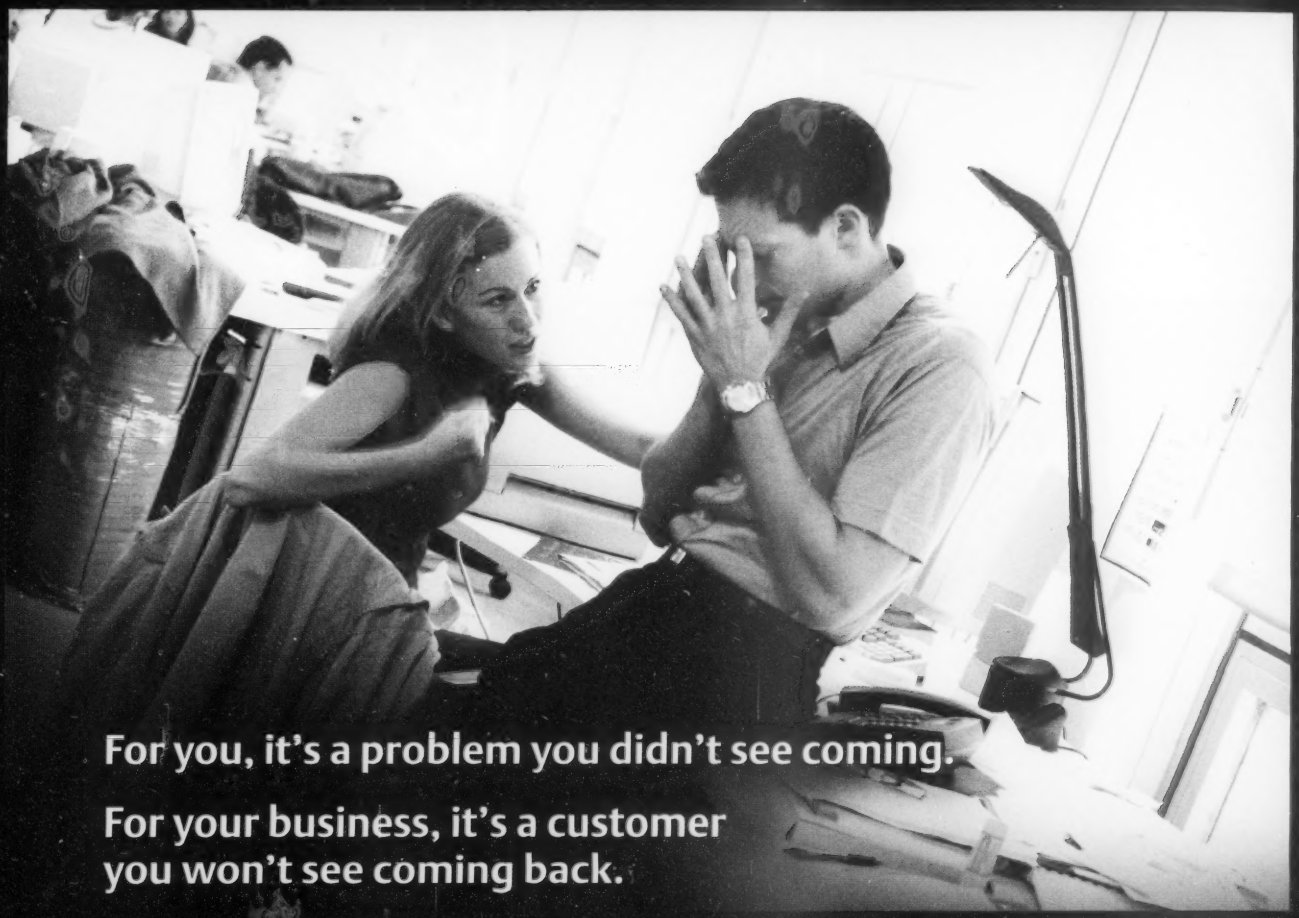
The conflict: We really don't believe users can resist temptation, focus on what's important and use good judgment when it comes to the Web. Zell does.

Or at least he thinks that's not an IT problem.

Is he crazy? Or is he right? It's no longer just a topic for idle debate. Some 20,000 Tribune employees are about to become an experiment in whether we need content filters — or just better management.

And Tribune's IT people will be the first to find out. ■

Frank Hayes *is* Computerworld's *senior news columnist. Contact him at frank_hayes@computerworld.com.*



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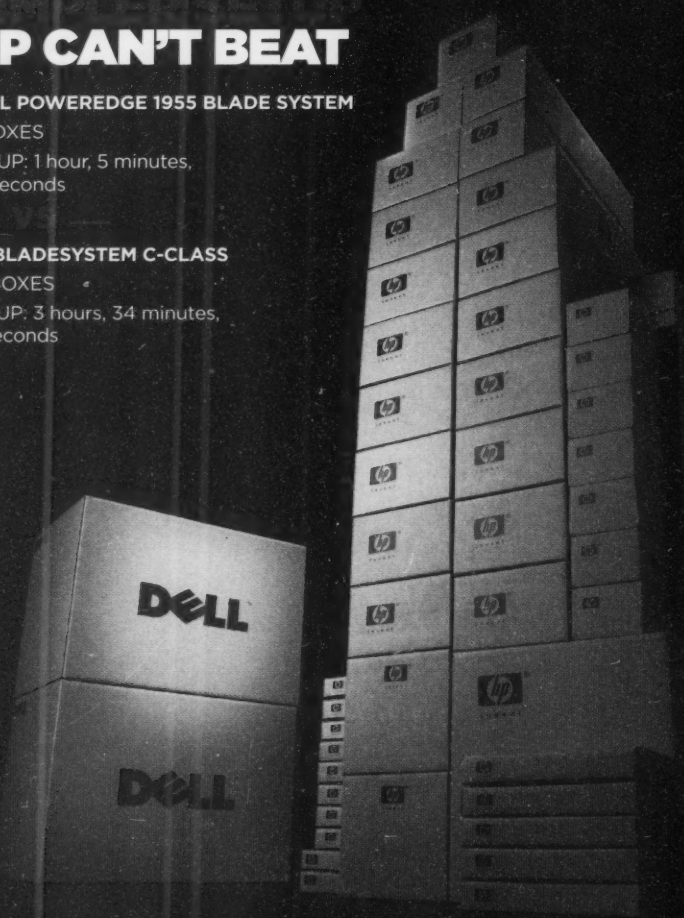

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